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A PHASE ONE ARCHAEOLOGICAL RECONNAISSANCE OF A PROPOSED DREDGED MATERIAL
DISPOSAL SITE AT PRAIRIE ISLAND, MINNESOTA

BY

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FINAL REPORT


Clark A. Dobbs

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<p>A Phase I archaeological survey was conducted on a 195 acre parcel of land on Prairie Island in Goodhue County during late October and early November, 1986. The survey area has been proposed as a disposal area for approximately 250,000 cubic yards of dredged materials from Lock and Dam No. 3 on the Mississippi River. The purpose of this survey was to determine whether any unknown archaeological resources were present, and locate and map prehistoric mounds in archaeological site 21GD75.</p> <p>One previously unknown prehistoric archaeological site (21GD173) was located along the shoreline in the northeastern portion of the survey area. This site is assignable to the Woodland Tradition. The mounds in 21GD75 were located, examined and described.</p> <p>The Woodland occupation of the Red Wing/Prairie Island area is poorly known. Site 21GD173 may have potential to provide significant information. If 21GD173 is to be disturbed, a Phase II archaeological survey should be conducted to determine the eligibility of the site for the National Register of Historic Places.</p>				
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MANAGEMENT SUMMARY

A Phase I archaeological survey was conducted on a 195 acre parcel of land on Prairie Island in Goodhue County, MN during late October and early November, 1986. Although the survey had been scheduled for September 1986, high water in September inundated much of the study area and made survey work impossible.

The survey area has been proposed as a disposal area for approximately 250,000 cubic yards of dredged material from Lock and Dam Number 3 on the Mississippi River. The purpose of this survey was to a.) determine whether any unknown archaeological resources were present within the survey area and b.) locate and map prehistoric mounds in archaeological site 21GD75.

Several different survey techniques were employed during the study. These included pedestrian survey, shovel testing, and hand-auger coring. The mounds in 21GD75 were visually inspected and mapped using field-notes and survey data compiled by T.H. Lewis in 1885. All maps, tests, and excavations were tied into a Corps of Engineers project map of the study area.

One previously unknown prehistoric archaeological site (21GD173) was located along the shoreline in the northeastern portion of the survey area. This site is assignable to the Woodland Tradition. The mounds in 21GD75 were located, examined, and described.

Treatment of human remains, including prehistoric burial mounds, is governed by the Private Cemetery Act (Mn.Stat. 307.08). If the mounds are to be disturbed, the possibility that they contain burials should be evaluated.

The Woodland occupation of the Red Wing/Prairie Island area is poorly known. Site 21GD173 may have the potential to provide significant information about this period. If 21GD173 is to be disturbed, a Phase Two archaeological survey should be conducted to determine the eligibility of the site for the National Register of Historic Places. Such a survey should precisely delineate the limits of the site and evaluate the integrity of the sub-surface deposits of material.

All field and survey notes, collections, and other materials pertaining to this project are permanently curated at the laboratory of the Institute for Minnesota Archaeology, 1313 Fifth St. SE, Suite 205, Mpls., MN.



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Any archaeological project is, of necessity, the product of the knowledge, talents, and cooperation of a number of individuals and organizations and this survey is no exception. I would like to particularly thank the following organizations and individuals for their help and assistance:

The St. Paul District, U.S. Army Corps of Engineers funded this study. Mr. Dennis Childs (Tribal Chairman) and the Prairie Island Mdewakanton Sioux Community granted permission to conduct the survey on Community property. The Community also plowed and disked much of the area to increase surface visibility so that the survey could be properly conducted and provided a variety of information on the project area.

Terry Pfutzenreuter (Corps of Engineers) administered the project and provided a series of pre-lock and dam maps of the Mississippi River.

Kim Breakey and Evan Engwall (IMA research staff) provided capable assistance during both the field and laboratory portions of the study. Douglas A. Birk (IMA Research Associate) provided invaluable information and insights into the study area and assisted in conducting the fieldwork. Needless to say, any errors of interpretation remain mine alone.

INTRODUCTION

During late October and early November, 1986, the Institute for Minnesota Archaeology (IMA) conducted a Phase I archaeological survey within a 195 acre tract located on Prairie Island in Goodhue County, Minnesota (Fig. 1). This survey was sponsored by the St. Paul District, U.S. Army Corps of Engineers.

The Corps is evaluating solutions to hazardous navigation conditions in and around Lock and Dam 3 on the Upper Mississippi River near Prairie Island. One possible solution would create some 250,000 cubic yards of dredged material. The preferred disposal area for this dredged material is the 195 acre tract on Prairie Island (Fig. 2).

Prairie Island is located on the west side of the Mississippi River immediately upstream from the confluence of the Cannon and Mississippi. The island is bounded on the west by the Vermillion River and on the east by a series of lakes, sloughs, and the Mississippi River itself. Prairie Island is within the Red Wing Locality as defined by Dobbs (1985) and contains numerous prehistoric earthworks and habitation sites. A comprehensive survey of the island has not been conducted and there may be unrecorded prehistoric and historic sites on the island.

One known site, a group of prehistoric mounds (21GD75), is within the proposed dredge spoil area. A French-period fort (21GD88) may also be present within the area that will be affected by the dredge spoil.

The St. Paul District negotiated a fixed-cost contract with the IMA to conduct a Phase I archaeological survey of the dredged spoil area. Survey work was to be conducted during September, 1986. Despite efforts of the field staff in September, unseasonably high water levels, excessive rainfall, and poor field conditions made it impossible to conduct the work until October, 1986. During field investigations, the heavy clay soils and high water table along the shoreline of the northern edge of the project made shovel testing cumbersome and very slow.

Fieldwork was conducted during September, October, and November of 1986 and involved 33 person-days of work for the field staff. Laboratory analysis and report writing were conducted in November and December 1986 and involved 6 person-days of work for the lab staff. The principal investigator worked on the project for four weeks.

The entire 195 acre study area was examined by IMA archaeologists. Most of the study area was agricultural land. These fields were plowed and disked and pedestrian survey techniques were employed in the cultivated portion of the project area.

The wooded area along the northern and eastern edges of the project area was investigated using shovel testing.

A series of hand-auger cores were taken in several parts of the survey area to evaluate the possibility that archaeological sites buried deeper than one meter might be present within the survey area.

All shovel tests, auger cores, and the mounds in 21GD75 were mapped and tied into a base-map of the area provided by the Corps of Engineers.

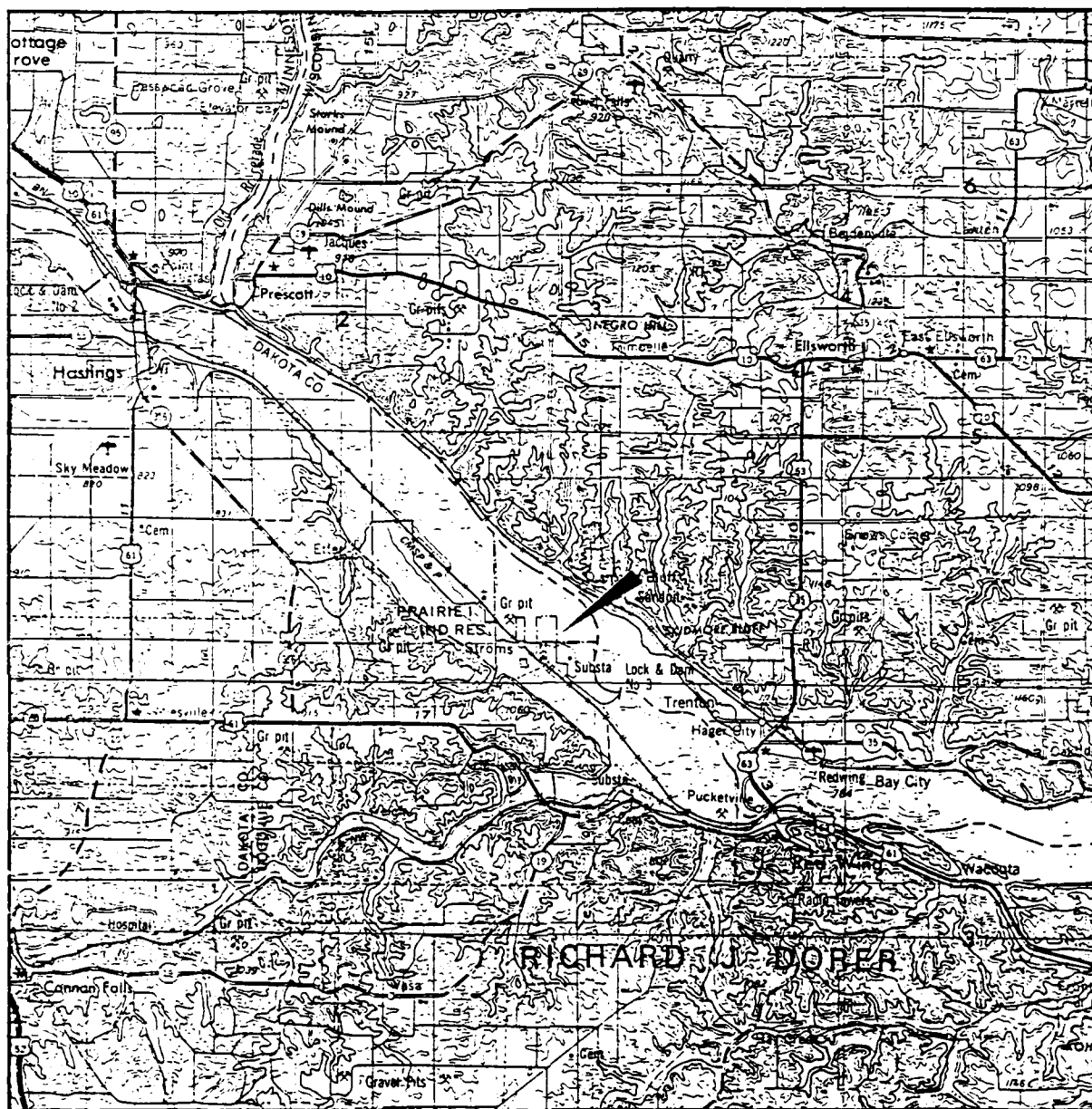
One previously unknown archaeological site (21GD173) was found within the survey area. This site is assignable to the Woodland Tradition. The mounds within 21GD75 were located, mapped, and their present condition described. The location of the suspected French fort site (21GD88) was not discovered.

21GD173 may have the potential to provide important information on the Woodland Tradition in this portion of the Upper Mississippi Valley. A Phase II archaeological survey of this site is recommended. The condition of the mounds in 21GD75 is variable. Some mounds are completely plowed-down, others are still visible, and some are relatively undisturbed.

The treatment of these mounds is governed by Mn.Stat. 307.08. Further study of these mounds and their evaluation is required if they are to be disturbed.

All field records, artifacts, photographs, and analysis sheets are permanently curated at the Institute for Minnesota Archaeology Laboratory in Minneapolis, MN. These records are available for inspection or further study upon request.

FIGURE 1: LOCATION OF PROJECT AREA



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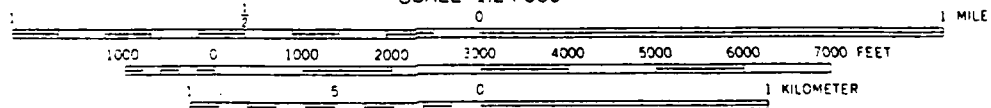
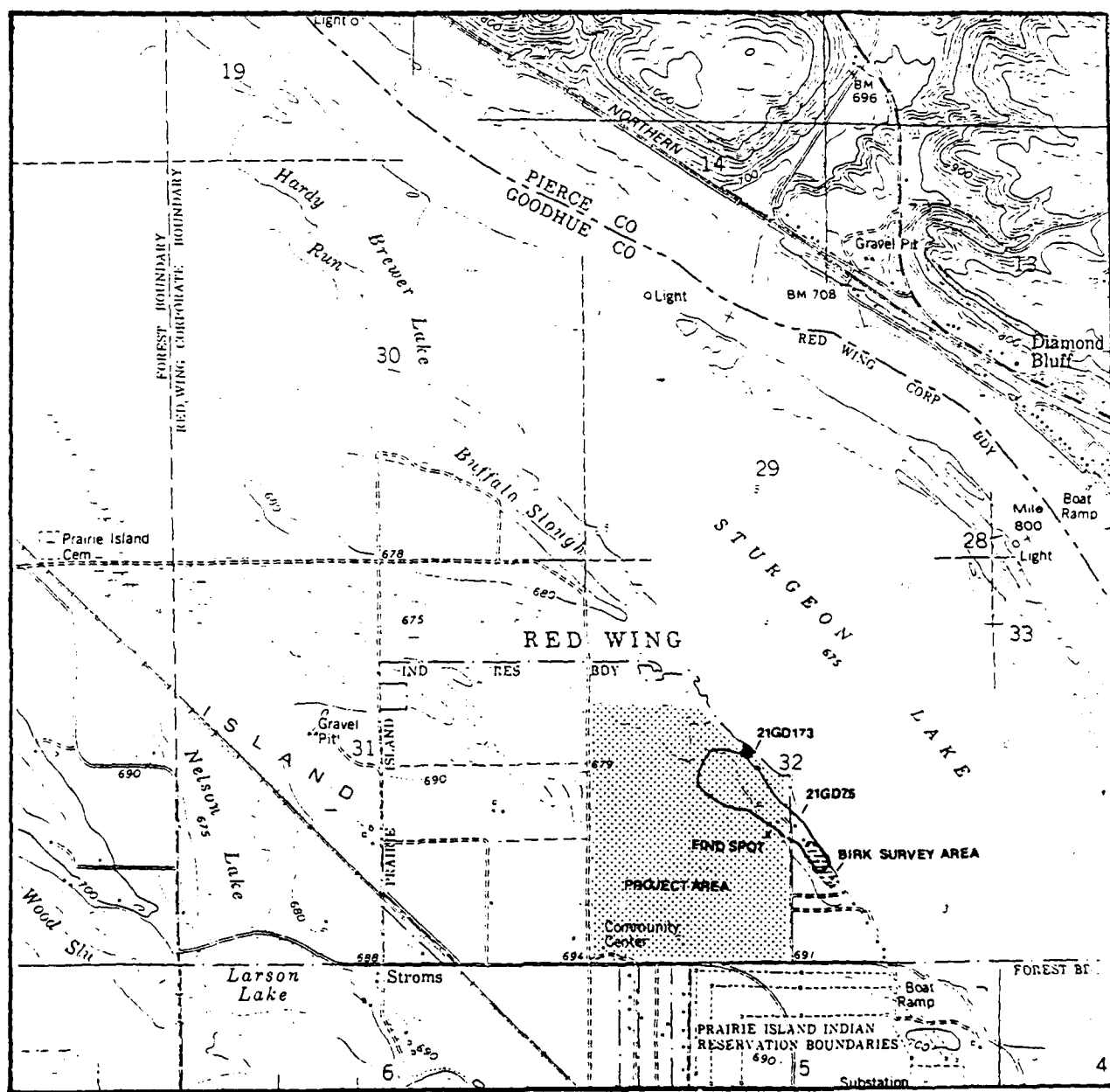
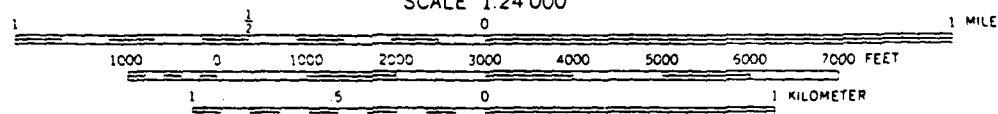


FIGURE 2: PROJECT AREA, SITES AND PREVIOUS INVESTIGATIONS



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PREVIOUS ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS

Introduction

The region surrounding the confluence of the Cannon and Mississippi Rivers was one of the most densely occupied areas of the Upper Mississippi River Valley during certain periods of prehistory. The antiquities of this region have intrigued both amateur and professional archaeologists for many years and a number of studies have been conducted in this region (e.g. Birk and Poseley 1977; Brower n.d.; Brower 1903; Dobbs 1984, 1985, 1986; Dobbs and Gibbon 1986; Gibbon 1974; Lawshe 1947; Lewis n.d.; Maxwell 1950; Overstreet et.al. 1983, 1979; Penman 1984; Wilford 1945, 1947a, 1947b, 1955, 1984; Winchell 1911). No comprehensive review of the antiquities of this entire region has yet been compiled, although Brower (1903) provides a map of the mounds in the area and Dobbs (1985) reviewed selected areas within the City of Red Wing.

Several archaeological studies have been conducted on Prairie Island. In 1885, T.H. Lewis (Northwestern Archaeological Survey) mapped many of the mounds on the island. Warren Upham and J.V. Brower also worked in the area (see Birk 1984). Lloyd Wilford investigated several sites on Prairie Island including the Nauer Mounds (21GD1) at the southern tip of the island, the Bartron site (21GD2), and 21GD75 (cf. McKusick 1953; Wilford 1947, 1955). Elden Johnson (University of Minnesota) has been active in work at the Bartron site and other nearby sites. Douglas A. Birk (Institute for Minnesota Archaeology) has recently investigated 21GD88 (Birk 1984, 1985).

Investigations at 21GD75

The mound group within the project area was mapped by T.H. Lewis (Northwestern Archaeological Survey) on October 16-24, 1885. N.H. Winchell (1911:144) mentions the mound group in a compilation of Hill/Lewis data and includes a redrafted sketch map of the site area.

Lloyd A. Wilford, University of Minnesota archaeologist, visited the site May 20-24, 1947 and observed that the "N - S Section Line" on both the Lewis and Winchell maps is actually the half section line. Wilford also pointed out that at the time of his visit summer cottages had been built in the area of mounds 1-7. Mound 1 was cut down and leveled off in the process of house construction and mound 3 was partly eroded by Sturgeon Lake. Wilford noted that the mounds west of the half section line were largely intact and in a pasture with the exception of those mounds in the Walter Laith farmyard. At the time of Wilford's visit, mound 25 was used as the foundation for a grainary and mound 44 had been largely destroyed.

In 1984 and 1985, IMA archaeologist Douglas Birk visited the site and observed that mound 2 has been "nearly flattened by the plow" and that a

horse stable at one time was constructed on mound 3. Cultivation of mound 3 had caused the diameter of this mound to increase to approximately 25 feet while the height had been reduced by 1.5 feet (Birk 1984:4).

A farmstead built by Michael Erickson, probably prior to 1901, is in the area of mounds 5 and 6.

The search for 21GD88

In 1982, Douglas A. Birk (Birk 1984; 1985) began archival and field research in an attempt to relocate a French period fort site (21GD88) described by T.H. Lewis during his visit to Prairie Island in October 1885. According to Lewis' observations, the fort was located within the boundaries of the mound group in 21GD75.

Birk conducted field investigations immediately east of the survey area for this project in 1984 and 1985. He excavated a series of shovel tests along the shoreline of Sturgeon Lake and dug seven 1x1 meter excavation units northwest of mound 3 (21GD75).

Although Birk was not able to positively relocate the French fort site, he discovered evidence of prehistoric, late-historic and modern-historic components within 21GD75.

Evidence for the prehistoric component included 'crumbs' of grit-tempered pottery and debitage found in several shovel tests. The prehistoric artifacts were recovered from depths between from 0-50 cm below surface, with the highest density of artifacts between 20-30 cm. It is possible that this prehistoric component may be contemporaneous with the mound group in 21GD75 (Birk 1984:5).

Artifacts associated with the late-historic component were recovered in shovel tests at depths between 10-30 cm below surface. The late-historic component dates to ca. 1810-1840 (Birk 1984:5).

The modern historic component is represented by modern artifacts (machine made nails, etc.) and postdates World War I (Birk 1984:5).

During the fall of 1986, Clark A. Dobbs and Birk conducted remote-sensing studies in the area that may contain the French fort. These studies have pinpointed several anomalies that may be part of the French fort. However, these anomalies are located outside of the present survey area.

ENVIRONMENTAL SETTING

Prairie Island is a large land-mass situated along the western edge of the Mississippi River floodplain in Goodhue County, Minnesota. The

island is separated from the Minnesota shore by the modern channel of the Vermillion River and is bounded along its eastern edge by an older drainageway presumably cut by the Vermillion River. This old channel drains a series of marshy areas along the northwestern portion of the island and contains North and Sturgeon Lakes. The main channel of the Mississippi is northeast of these lakes and at present is close to the Wisconsin shore of the river.

The surficial sediments of Prairie Island are predominantly sands and gravels deposited during the early Holocene. These sediments were deposited as the glacial ice masses to the north melted and discharged a torrent of meltwater and outwash debris down the Mississippi River channel.

The outwash deposits on Prairie Island are related to similar deposits on Grey Cloud Island to the north, and to outwash sediments underlying portions of the cities of Red Wing and Wabasha, MN, and Hager City, WI. These outwash deposits are quite well drained and for this reason appear to have been preferred localities for prehistoric villages and farms.

The vegetation of Prairie Island has changed throughout the Holocene. No detailed paleoecological study has been done in the immediate vicinity of the island but the vegetational sequence probably was similar to other parts of the region.

Pollen studies near St. Paul (Ojakangas and Matsch 1982:115, Fig. 7.24) suggest that spruce was the dominant tree type in eastern Minnesota between 12,000 and 10,000 years ago. This 'boreal forest' type of vegetation was replaced by a mixture of pine and mesic species (elm, birch, and others) roughly 10,000 years ago. The mid-continental dry period (Altithermal), between roughly 5,000 and 7,000 years ago, was characterized by a period of drought and subsequent expansion of the prairies into eastern Minnesota and across the Mississippi River. Following the end of the Altithermal, northern hardwood forest dominated by oaks replaced much of the prairie vegetation in eastern Minnesota, and this general configuration of vegetation persisted until the time of European settlement.

The xeric soils of Prairie Island and other outwash areas along the Upper Mississippi were ideally suited for the tall-grass prairie type of vegetation. Wet and dry prairie vegetation, with a fringe of floodplain forest, covered the island at the time of European settlement (Marschner 1975; Heinselmann 1975) and this prairie probably was first established during the Altithermal period.

Prairie Island was a particularly attractive area for prehistoric groups because of the complex mosaic of natural resources in the immediate vicinity of the island. The marshes and backwater sloughs of the Vermillion and Mississippi Rivers contained a variety of plants, fish, freshwater mussels and migratory waterfowl. During the period of prairie expansion, the uplands on both the Minnesota and Wisconsin side

of the rivers probably were inhabited by bison. After the expansion of the deciduous hardwood forests, a variety of plant and animal resources (most notably white-tailed deer, edible nuts, and high-quality fuel for use in fires) were readily available in the uplands. Similarly, large quantities of Prairie du Chien chert was obtained from the adjacent bluffs.

Most of the land on Prairie Island is under cultivation today and the production of both grain and forage crops is important. The slopes and bluff edges adjacent to Prairie Island are covered with deciduous hardwood forest dominated by oak, and the island is fringed with northern floodplain vegetation (e.g. Shelford 1963). The construction of the lock and dam system on the Mississippi River has raised the water level roughly ten feet around the island. As a result of this higher water level, the lakes along the northern edge of the Island have expanded considerably. Despite higher water levels and changes in water quality of the river, the plants and animals in the sloughs, marshes, and forests are still reminiscent of the pre-European configuration on Prairie Island.

THEORETICAL AND METHODOLOGICAL OVERVIEW

This study is a Phase I archaeological survey of a proposed dredge disposal area on Prairie Island sponsored by the St. Paul District Corps of Engineers. The goal of the St. Paul District is to fulfill, in part, the obligations of the Corps of Engineers regarding cultural resources as delineated in Sections 1 and 2 of the project scope of work (See Appendix I). To achieve this goal, the Corps requested that the IMA complete the following tasks: a.) determine whether there are significant cultural resources within the project area; b.) locate and precisely map the mounds within 21GD75 and c.) discover whether the suspected French fort site (21GD88) is within the boundaries of the project area.

This survey is also part of a broader program of research in the Lake Pepin area that is being conducted by the Institute for Minnesota Archaeology. The goal of the IMA's research is the development of a model of the evolution of human ecosystems in the Upper Mississippi River Valley. Two aspects of this research include the study of the early French presence in the Lake Pepin area (Birk 1984, 1985; Birk and Posesely 1977) and examination of the evolution of complex horticultural societies in the Lake Pepin area during the 11th through the 14th centuries A.D. (Dobbs 1984, 1985, 1986; Dobbs and Gibbon 1986).

This project had four specific objectives that were designed to assist both the Corps and the IMA in achieving their broader goals. These objectives were:

- 1.) Map and evaluate the mounds contained within 21GD75.
- 2.) Continue the search for the suspected French fort site (21GD88) that should be located in this portion of Prairie Island.
- 3.) Locate any previously unrecorded archaeological sites that may exist near the ground surface within the project area.
- 4.) Evaluate the potential for the presence of deeply buried archaeological sites within the project area.

FIELD METHODS

Four different types of field methods were used to meet the survey objectives. These methods included inspection of the ground surface (pedestrian survey), shovel testing, auger testing, and location and mapping of the mounds in 21GD75 using nineteenth century maps of the mounds prepared by T.H. Lewis.

Study area

The project area contains 195 acres, the majority of which has been under cultivation for more than 100 years. The northern edge of the area is wooded. Surface cover included a mixture of underbrush and northern floodplain species like willow, cottonwood, and hackberry. The southwest corner of the study area has been disturbed by the construction of the Prairie Island Community Center and the Little Six Bingo Hall. A twentieth century dump is in the extreme northwestern corner of the project area. The land-surface around the dump has been substantially modified. There is a modern house and farmyard in the northeastern corner of the project area.

Mapping

During September, 1986, the Corps of Engineers prepared a detailed contour map of the project area. Hubs and lathes used as base points during the mapping project were left in place within the study area. To facilitate accurate and rapid relocation of archaeological sites and tests, the auger tests, shovel tests, artifacts, and mounds examined during fieldwork were mapped using this existing grid system. Mapping was conducted using a steel tape and compass.

Pedestrian survey

Most of the project area has been under cultivation for more than one hundred years. At the beginning of the survey, the fields in the study area were covered with weeds and crop residue. As a consequence, surface visibility was extremely poor. Therefore, the Prairie Island

Mdewakanton Sioux Community plowed and disked the fields. After plowing and disking, the fields were allowed to 'weather' through several rainstorms. When the surface walkover was conducted, visibility was good to excellent.

The entire cultivated area was walked and inspected. Fifteen meter intervals were maintained between members of the survey team during the surface inspection.

Auger testing

Archaeologists have become increasingly sensitive to the possibility that prehistoric sites may be deeply buried within alluvial settings (e.g. Dobbs 1976; Thompson and Bettis 1980; Overstreet 1984). Buried cultural deposits are not normally located using traditional archaeological survey methods. Time and money were not available for intensive deep-testing during this survey. However, the survey team felt that the alluvial character of Prairie Island required at least some initial examination of the soils and sediments to depths greater than shovel-testing normally permits. Therefore, a bucket auger with a bucket diameter of approximately 7 cm was used to obtain a series of cores from selected loci within the project area. Auger tests were excavated to depths ranging from .7 to 3.18 meters and fill from each auger test was screened through 1/4" mesh and examined for cultural material. High water levels and impenetrable zones of gravel complicated the excavation procedure in several areas.

Shovel testing

Shovel tests were excavated where surface visibility was poor. A series of fifty-four shovel tests were excavated in the wooded area along the northern edge of the project area (Fig. 3).

Shovel tests were excavated along a series of north-south transects within the wooded area. Transects started at the southern edge of the treeline along Sturgeon Lake (see Fig. 3). The transects were spaced 200 feet apart. Tests within each transect were spaced at 15 m intervals.

A 15 meter interval between transects would have been more informative than the 200 foot interval that was employed. However, the heavy, wet, clay soils along the shoreline made shovel testing extremely slow. Therefore, after a field consultation with Terry Pfutzenreuter (Corps of Engineers), the 200 foot interval between transects was adopted.

The dump area in the northwestern portion of the project was not included because of the extensive modification of the ground surface associated with dumping activity.

Shovel testing in the extreme eastern edge of the project area was avoided because the mounds within 21GD75 may contain human burials. The

farm home and yard in the eastern edge of the project area were also not tested.

The average width of a shovel test was approximately 40 cm and each test was excavated to the water table if possible. All fill from each shovel test was screened through 1/4" mesh and any artifacts found in the test were collected and bagged. Vertical profile maps were drawn for each shovel test and the nature of the soils and sediments was noted on the drawing. The location of each shovel test was tied into the Corps surveyors baseline.

Mound location and mapping

The mounds within 21GD75 were mapped in October of 1885 by T.H. Lewis (Northwestern Archaeological Survey). One hundred years of cultivation, development, and shoreline erosion has significantly altered the mounds in the group. The original survey notes prepared by Lewis were used to locate and remap these mounds. The angles and distances recorded by Lewis in 1885 were used to relocate mound positions. The present condition of the mounds was noted and the visible mounds were mapped using compass and steel tape in relationship to the surveying stations set by COE surveyors.

METHODS OF LABORATORY ANALYSIS

After fieldwork was completed, the artifacts recovered during the survey were washed, processed, and analyzed at the IMA laboratory. Standard IMA procedures were used in artifact analysis (IMA 1986). Fieldnotes, maps, and photographs were checked for errors and discrepancies and then curated.

RESULTS

Pedestrian survey

The only artifacts found during the surface walkover were two stone waste flakes along the east edge of the project area and south of 21GD75 (Fig. 3). These flakes could have been created by non-cultural means (e.g. plowing). Therefore, no site number was assigned to the area where these possible artifacts were found.

No other cultural debris was located during the pedestrian survey and we conclude that no prehistoric archaeological sites that can be located by surface inspection exist in this portion of the study area.

Auger testing

Auger tests were dug in three sections of the project area. The location of these auger tests are shown in Fig. 3.

Auger testing was first attempted during September in areas north of the 20+00N line. However, the flooding of the north half of the project area in mid-September and October made excavation impossible. Auger test 2, where the water table was reached at 30 cm on September 24, is an example of the difficulties encountered by the field archaeologists (see Fig. 4).

Auger tests 1 and 3 - 11 were excavated along an east-west line at 20+00N/0+00E (Fig. 3). The average depth of the water table along this line was approximately 70 cm. Soil profiles throughout this area were similar. The profile of auger test 6 (Fig. 4) is typical. This line of auger tests was terminated after auger test 11 since further testing would encroach upon the mound area. No cultural material was recovered from any of these auger tests.

Auger tests 12, 14 -16, 18, and 19 were excavated in the southeast quarter of the project area (Fig. 3) along an east-west line at 6+00N/26+49E. Auger tests 13 and 17 were placed low terraces to determine if these terraces represented alluvial features. Three tests were taken to the water table. The depths of these tests ranged from 190 cm to 318 cm below ground surface. The other five tests were excavated to approximately 1 meter below ground surface and then terminated when the underlying gravel zone became impenetrable. The stratigraphy is similar throughout the area and the vertical profile of auger test 19 is typical. No cultural material was recovered was recovered from any of the tests.

By early November, the water levels had subsided enough so that auger testing could be conducted in the northwestern part of the project area. Auger tests 20 - 25 were excavated along a line that ran approximately north-south from the 20+00N/4+00E surveying station. Rises on the floodplain that may have been formed as alluvial terraces and low lying areas between the terraces were specifically investigated (Fig. 3). Four tests were taken to the water table (Auger test 20 - 188 cm, Auger test 22 - 100 cm, Auger test 23 - 160 cm and Auger test 25 - 210 cm). Tests 23 and 25 were terminated due to a zone of gravel that could not be penetrated with the bucket auger. Soil stratigraphy was similar in all of the tests with the exception of No. 22 and No. 24. Auger test 22 was excavated in a low lying area and had a zone of silty clay overlying the typical sandy or silty sand loam of the plowzone. The water table was higher in this area also. Auger test 24 was excavated on a fairly high distinct rise which may not be natural. A much deeper zone of sandy and silty sand loam may indicate that this is a manmade rise that may be associated with the garbage dump immediately to the west (see vertical profile of shovel test 25, Fig. 4). No cultural material was recovered from any of these auger tests.

Natural stratigraphy

The auger testing provides an overall picture of the natural stratigraphy throughout the southern three-quarters of the project area. The stratigraphy was relatively uniform throughout this area and may be described as follows.

The A horizon is typically a sandy or silty sand loam containing small size gravel in varying density. Munsell soil colors range from 7.5YR2/0 (Black), 10YR2/1 (Black) to 10YR2/2 (Very dark brown). Depth of the A horizon ranges from 11 cm to 52 cm below surface with an average depth of 30 cm. In three tests, the texture of the A horizon was a clay or sandy clay loam (Auger tests 4, 17, and 22).

Zone B is typically a layer of silty sand with increasing density and size of gravel. Depth of Zone B ranges from 10 to 30 cm beneath the plowzone. Munsell colors range from 10YR2/1 (Black), 10YR2/2 (Very dark brown), 10YR3/2 (Very dark grayish brown) to 10YR3/3 (Dark brown).

Zone C (parent material) is typically composed of coarse sand and gravel. Munsell colors range from 10YR3/3 (Dark brown), 10YR3/4, 10YR4/4 and 10YR4/6 (Dark yellowish brown). In six tests the gravel density decreases with depth and the sand becomes slightly finer grained. There is no color change associated with the change in sediment size. The change is indistinct and the depth of the change is estimated as follows: Auger test 1 - 82 cm; Auger test 12 - 123 cm; Auger test 13 - 120 cm; Auger test 19 - 80 cm; Auger test 23 - 120 cm; Auger test 25 - 120 cm.

Auger Tests

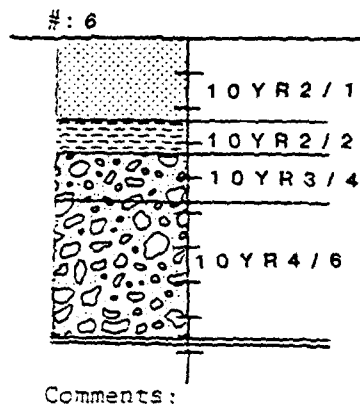
IMA SHOVEL TEST LOG

18

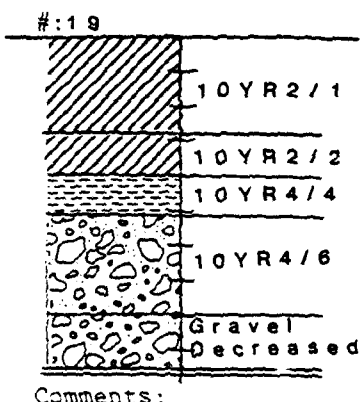
Project Prairie Island-1986

Sample Unit: N/A

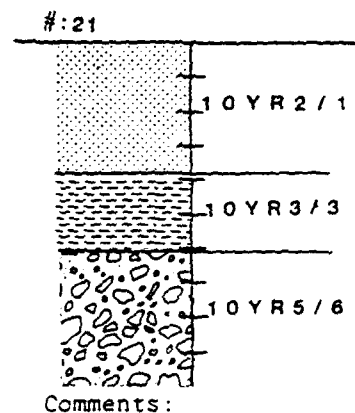
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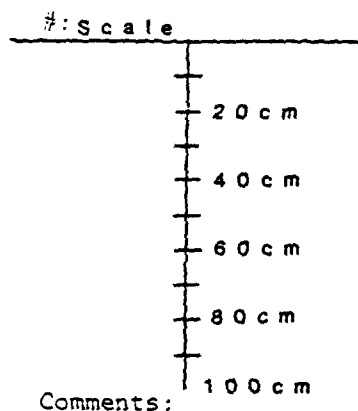
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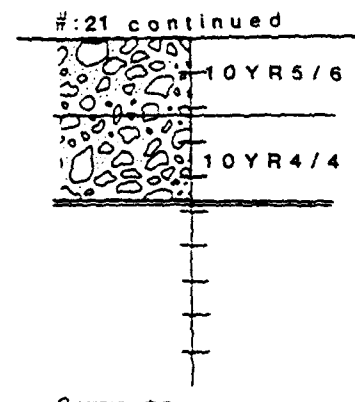
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
Comments:



Comments:




Comments:

 Sandy loam with
small sized gravel

 Silty sand loam and gravel

 Silty sand and gravel

 Clay loam

 Sandy clay loam

 Coarse sand and gravel

Figure 4. Vertical profiles of selected auger tests.

Shovel testing

Fifty-four shovel tests were excavated within the study area. These were placed either within or immediately adjacent to the wooded area along the northern and eastern shoreline of Sturgeon Lake. Because of the possibility that unmarked human burials were present in and around the mounds in 21GD75, shovel tests were not excavated within the site area.

Six shovel tests contained cultural material (Fig. 3) and are described during the discussion of 21GD173 that follows.

The stratigraphy in the area that was shovel tested is similar to that of the area in which auger tests were dug. Representative vertical profiles of shovel tests are shown in Fig. 5. Twenty-seven tests (No.'s 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18, 34, 35, 36, 43, 44, 45, 46, 47, 51, 52 and 53) have sandy or silty sand loam and gravel, and silty sand and gravel to a maximum depth of 64 cm. Below this is the typical Zone C (coarse sand and gravel) described for the auger tests. Average depth of the water table in the shovel tests was 70 - 80 cm. Soil colors are in the same range as similar profiles from the auger tests.

Twenty-four shovel tests had an upper zone of sandy clay or dense clay loam extending to a maximum depth of 55 cm. These tests (excluding those with very high water table) typically had a layer of silty sand and gravel beneath the clay zone followed by a layer of coarse sand and gravel. Once again the colors are in the same range as those for the auger tests. This clay zone is likely the result of recent alluvial deposit due to flooding.

The western two-thirds of the wooded area is in close proximity to a wetland area. The shovel tests in this area typically have an upper zone containing substantial amounts of silt and clay. Tests in which this zone occurs extend south from the marsh edge almost to the tree line. In the eastern third of the wooded area, this silty-clay zone is present in tests up to 75 meters south of the shoreline. This zone is not present in the higher 'terrace' area. Shovel tests No. 15, 16, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 39, 40, 41, 42, 48, 49, 50 are characterized by a higher clay content in the upper zone and a higher water table.

Shovel tests No. 24 and No. 25 are in the area of the rise discussed in connection with auger test 24. The surrounding shovel tests are characterized by an upper zone containing either sandy clay loam or dense clay loam. However, these two tests have an upper layer of sandy loam, much like the typical profiles south and east of this area. The clay zone in shovel test 24 is followed by a zone of silty sand and gravel and then coarse sand and gravel similar to the majority of auger and shovel profiles throughout the project area. All colors are in the range of similar auger test profiles. Shovel test No. 25 (see Fig. 4),

however, has a zone of dense clay loam beneath the silty sand and gravel followed by a zone of sandy clay loam and then the coarse sand and gravel.

Shovel test No. 54 is along the shoreline of Sturgeon Lake on the easternmost edge of the project area. The profile of this test showed a much wider zone of silty sand loam and gravel than was common elsewhere in the project area. This zone may be the result of a large amount of recent deposition during flood episodes. The silty loam extends to a depth of 110 cm and is followed by a zone of coarse sand and gravel. Shovel test 54 was terminated at 120 cm before encountering the water table (root problem prohibited further excavation). The right distal end of a small mammal femur was recovered at 99 cm. However, it is unlikely that this bone is cultural in origin.

Shovel Tests

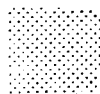
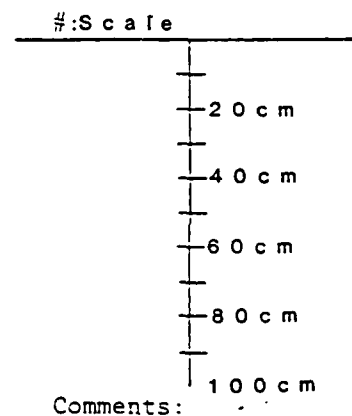
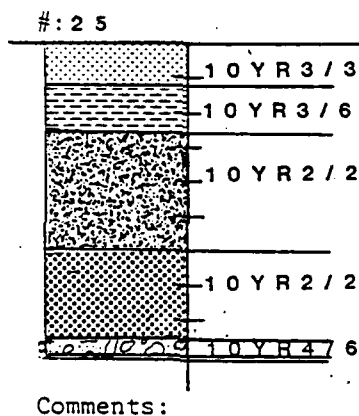
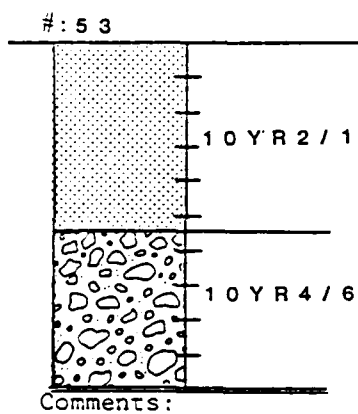
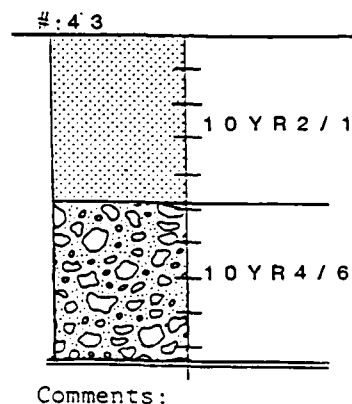
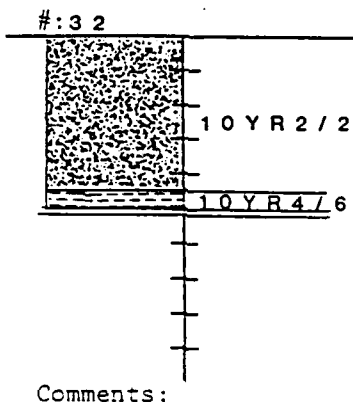
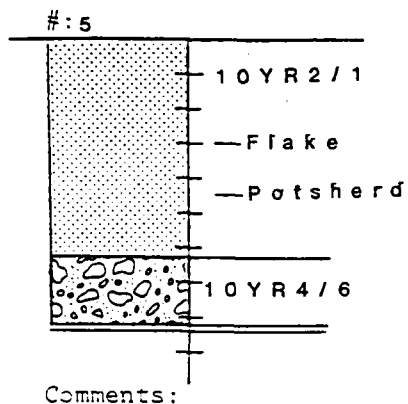
IMA SHOVEL TEST LOG

21

Project Prairie Island-1986

Sample Unit: N/A

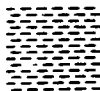
Vertical Scale: 1 is 10 CM



Sandy loam with
small sized gravel



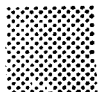
Silty sand loam and gravel



Silty sand and gravel



Clay loam



Sandy clay loam



Coarse sand and gravel

Figure 5. Vertical profiles of selected shovel tests.

21GD173

One previously unknown archaeological site was located during the course of the shovel testing. The definition of this site is based on the presence of cultural debris in six of the shovel tests along the shore of Sturgeon Lake. The state site number assigned to this site is 21GD173.

21GD173 is within an undisturbed wooded area on the floodplain adjacent to Sturgeon lake and consists of a thin scatter of artifacts. These artifacts include 1 biface fragment, 1 piece FCR, 1 core, 3 flakes and 1 decorated "near rim" pot sherd (Table 1). The site is assignable to the Woodland Tradition. This conclusion is based on the temper and decoration of the pot sherd.

Based on the shovel tests, the are of the site appears to be slightly less than one half acre. The legal description of 21GD173 is: SW1/4, SE1/4, SE1/4, NW1/4 of Section 32, T115N, R15W. The site is within Welch Township (Goodhue County, MN) and is shown on the U.S.G.S. 7.5' Diamond Bluff West topographic map. The site is owned by the Prairie Island Mdewakanton Sioux Community.

FIGURE 6: STATE SITE FORM FOR SITE 21GD173

MINNESOTA ARCHAEOLOGICAL SITE FORM			
COUNTY Goodhue	SITE NAME	FIELD NUMBER	STATE NUMBER 21GD173
WNER Prairie Island Indian Reservation		U.S.G.S. QUAD Diamond Bluff West	
SITE LOCATION From Prairie Island Community Center - about ½ mile east to Fraser Road - north to Sturgeon Lake shore - 850 ft northwest along shoreline		LEGAL DESCRIPTION SW¼, SE¼, SE¼, NW¼ SEC 32 T. 115N R. 15W twntp: Welch	
SITE TYPE Buried artifact scatter		PROBABLE CULTURAL COMPONENTS: Woodland	
SITE DESCRIPTION / ENVIRONMENTAL SETTING Site is in woods on floodplain adjacent to Sturgeon Lake			
SITE CONDITION Undisturbed	CURRENT LAND USE Idle		SITE AREA ½ acre
NATURE OF NEAREST WATER Sturgeon Lake	DISTANCE TO WATER Adjacent	DIRECTION OF SITE FROM WATER South	
ELEVATION OF SITE: 660 ft		ELEVATION OF NEAREST WATER: 680 ft	
NATURE, EXTENT OF INVESTIGATION: Shovel test - 15 M interval			
ARTIFACTS OBSERVED, RECOVERED: 1 bifacial fragment, 1 LCP, 1 core, 3 flakes, and 1 decorated "near rim" pot sherd			
LOCAL COLLECTIONS, INFORMANTS: NONE		MAP SCALE 1:24,000	
WRITTEN REFERENCES NONE			
COMMENTS: Site is adjacent to north edge of 21GD75, a mound group mapped by Lewis in 1885			
ACCESSION NOS.	PHOTO NOS.	REPOSITORY: IMA	INVESTIGATORS: Dobbs
		PROJECT: Prairie Isl Survey	DATE: 10/86

TABLE ONE: ARTIFACTS RECOVERED DURING PRAIRIE ISLAND SURVEY

LOCATION	ITEM DESCRIPTION
Find spot	
Surface south of 21GD75	1 primary flake, Prairie du Chien chert
	1 secondary A flake, Prairie du Chien chert
21GD173	
Shovel test 1 (surface)	1 biface fragment, Prairie du Chien chert
55 cm	1 granitic fire-cracked rock weighing 253.3 grams.
Shovel test 3 45 cm	1 irregular quartzite core
Shovel test 4 33 cm	1 tertiary flake, quartz
Shovel test 5 30 cm 45 cm	1 tertiary flake, banded chert 1 grit-tempered 'near-rim' potsherd, cord-roughened exterior, oblique cord-wrapped stick impressions on interior
Shovel test 11 26 cm	1 tertiary flake, Prairie du Chien chert
Shovel test 54 99 cm	1 right distal femur, small mammal

21GD75 - Mound location and mapping

Although the mounds within 21GD75 were mapped by T.H. Lewis in 1885, the location of many of the mounds has been obscured during the last one hundred years.

During November, 1986, IMA archaeologists used Lewis' original survey notes to prepare an accurate modern map of the mounds. The location of the mounds is shown in Fig. 4.

Lewis' original measurements are given in Table 2. In several instances, IMA archaeologists noted discrepancies between Lewis' notes and the position of the mounds as mapped today. These discrepancies are noted in Table 2.

Lewis mapped 45 mounds in this particular group. Of these mounds, four (seven percent) have been destroyed, eight (eighteen percent) are not visible today, and thirty-three (seventy-three percent) are still visible. The current status of each mound in 21GD75 is given in Table 3.

TABLE TWO: ORIGINAL SURVEY DATA FOR 21GD75

FROM NORTHWESTERN ARCHAEOLOGICAL SURVEY NOTEBOOK 23 PAGE 12
 HILL-LEWIS MANUSCRIPTS, MINNESOTA HISTORICAL SOCIETY ARCHIVES
 (MEASUREMENTS ARE IN FEET)

MD NO.	DISTANCE (FT)	ANGLE	MD NO.	ORIGINAL DIAMETER	ORIGINAL HEIGHT	COMMENTS
1				80	8	
1	382	N33W	2	30	1.5	
2	72	N26W	3	50	4.5	
3	195	N73.5W	4	20	1	
4	61	N3E	5	24	1.5	
5	60	N41W	6	26	1.5	
6	47	S42W	7	28	2	
7	90	S50.5W	8	25	1.5	
7	110	N64.75W	9	25	1.5	
9	87	N78W	10	20	1	
9	91	N32.5W	11	22	1.5	
11	82	N17.5E	12	32	2	
12	64	N68E	13	22	1	
13	61	S38.5E	14	18	1	
14	27	N54.5E	15	20	1	
14	70	S1W	16	20	1	
14	105	S51.5E	17	20	1	
12	62	N54W	18	23	1	
18	59	N42E	19	32	2	
18	77	N16.5W	20	30	1.5	
18	40	S55W	21	19	1	
21	34	S14.5W	22	24	1	
21	90	N44W	23	32	2	
23	95	N41W	24	23	1	
24	79	S31.5W	25	62	4.5	
25	152	S58W	26	36	3.5	ORIGINAL ANGLE S46.75W
24	50	N56.25W	27	24	1.5	
27	61	N49.5W	28	26	1.5	
28	83	N64W	29	26	1	
29	136	S7.5W	30	25	1	
30	75	S69.5W	31	30	2	
31	124	S76W	32	35	2.5	
29	53	N12.25W	33	20	1	
33	60	N74W	34	30	1.5	
33	70	N26.5W	35	26	1.5	
35	43	N68.5W	36	24	1	
36	26	S36W	37	18	1	
36	37	N62.5W	38	30	1.5	
36	55	N2.5E	39	26	1	
39	56	N60W	40	25	1.5	
40	65	N41W	41	22	1	
41	240	S81W	42	50	2.5	ORIGINAL DISTANCE 285
42	170	N2W	43	30	1	ORIGINAL DISTANCE 207
42	172	S37.5W	44		4	
44	188	S15.5E	45	40	2.5	

TABLE THREE: PRESENT CONDITION OF MOUNDS IN 21GD75

MOUND NO.	PRESENT CONDITION	PRESENT HEIGHT (FT)	COMMENTS
1	DESTROYED	N/A	HOUSE CONSTRUCTION (WILFORD 1947)
2	VISIBLE	0.5	CULTIVATED (BIRK 1984:4)
3	VISIBLE	4	CULTIVATED, STABLE CONSTRUCTION, EROSION (BIRK 1984:4)
4	DESTROYED	N/A	DRIVEWAY
5	VISIBLE	1	ID TENTATIVE, FARM YARD
6	VISIBLE	0.5	ID TENTATIVE, SE CORNER OF HOUSE FOUNDATION
7	VISIBLE	1.5	BISECTED BY ROAD
8	VISIBLE	1.5	FARM YARD
9	VISIBLE	1.5	FARM YARD
10	DESTROYED	N/A	FARM HOUSE
11	VISIBLE	1	1/2 DESTROYED BY DRIVEWAY
12	VISIBLE	2	WOODS N OF FARM HOME, DUMP IMMEDIATELY ADJACENT
13	VISIBLE	1.5	WOODS N OF FARM HOME
14	VISIBLE	1	WOODS N OF FARM HOME
15	VISIBLE	1	WOODS N OF FARM HOME
16	VISIBLE	1	WOODS N OF FARM HOME
17	VISIBLE	1	WOODS N OF FARM HOME
18	VISIBLE	1	WOODS N OF FARM HOME
19	VISIBLE	1.5	WOODS N OF FARM HOME
20	VISIBLE	1.5	WOODS N OF FARM HOME
21	VISIBLE	0.5	WOODS N OF FARM HOME
22	DESTROYED	N/A	SHED IN FARM YARD
23	VISIBLE	2	WOODS N OF FARM HOME
24	NOT VISIBLE	N/A	CULTIVATED
25	VISIBLE	4	ONCE FOUNDATION FOR GRAINERY (WILFORD 1947)
26	VISIBLE	1.5	CULTIVATED
27	VISIBLE	0.5	CULTIVATED
28	VISIBLE	0.5	CULTIVATED
29	NOT VISIBLE	N/A	CULTIVATED
30	VISIBLE	0.75	CULTIVATED
31	VISIBLE	1	CULTIVATED
32	VISIBLE	0.5	CULTIVATED
33	VISIBLE	0.5	CULTIVATED
34	VISIBLE	0.5	CULTIVATED
35	NOT VISIBLE	N/A	CULTIVATED
36	NOT VISIBLE	N/A	CULTIVATED
37	NOT VISIBLE	N/A	CULTIVATED
38	NOT VISIBLE	N/A	CULTIVATED
39	VISIBLE	0.5	CULTIVATED
40	NOT VISIBLE	N/A	CULTIVATED
41	NOT VISIBLE	N/A	CULTIVATED
42	VISIBLE	1.5	CULTIVATED
43	VISIBLE	1	ON EDGE OF WOODS
44	VISIBLE	2	USED FOR BACK DIRT (WILFORD 1947)
45	VISIBLE	2	CULTIVATED

EVALUATION AND CONCLUSIONS

Evaluation

This Phase I archaeological survey had four distinct goals. These were: 1.) Locate and map the mounds contained within 21GD75; 2.) Continue the search for the suspected French fort site (21GD88) that should be located in this portion of Prairie Island; 3.) Locate any previously unrecorded archaeological sites on or near the ground surface that may exist within the project area; 4.) Evaluate the potential for the presence of deeply buried archaeological sites within the project area. These goals have been achieved.

The prehistoric mounds contained within 21GD75 have been located, mapped, and their present condition noted. The locations of these mounds as shown in this report are accurate within the limits of the methods used. The mounds were located during November 1986 and surface visibility at that time was excellent. Where mounds were destroyed or not visible, there is an estimated error of no more than 15 feet. The location of mounds that are visible are, of course, not subject to this level of error.

Although the site of the French period fort (21GD88) should be within the immediate vicinity of the project area, its precise location continues to elude archaeologists. Remote-sensing studies by IMA archaeologists, however, have pinpointed a series of anomalies along the eastern shoreline of Sturgeon Lake. Further testing of these anomalies may result in the discovery of the fort.

One previously unknown archaeological site (21GD173) was discovered within the project area. Additional small sites may exist between the transects of shovel tests along the northern shore of Sturgeon Lake. However, if such sites do exist, they will be small and have a low density of artifacts.

Birk (1984) located prehistoric site material along the edge of Sturgeon Lake within the 21GD75. This prehistoric component probably also exists within the boundaries of the present study area along the eastern edge of Sturgeon Lake.

No archaeological sites were found during the surface walkover of the project area. Given the quality of the field conditions, it is unlikely that any additional sites will be found within this area. If such sites are located, they will be extremely small scatters of cultural debris probably containing less than five artifacts. It is doubtful that such sites would be considered eligible for listing on the National Register of Historic Places.

No evidence of deeply buried sites was found during either the shovel testing or auger testing. This conclusion is based on a limited number of deep tests and therefore must be considered tentative. However, some initial conclusions may be drawn based on the results of the coring.

The quality of field conditions significantly affects the reliability of any archaeological survey. The early stages of this project were plagued by inclement weather and poor field conditions. However, by late October, when the bulk of the fieldwork was completed, surface visibility had improved substantially. Therefore, the results presented above may be accepted with confidence.

Conclusions

The principal objective of this study was to assist the Corps of Engineers in complying with the various state and federal laws and regulations that govern the treatment of cultural resources. However, there are several broad conclusions about the character and distribution of prehistoric archaeological sites in this region that have emerged from this study.

First, it appears that most prehistoric sites on Prairie Island will be located in immediate proximity to wetland areas (e.g. the Vermillion River, Sturgeon Lake, marshes, etc.). Although some sites may be located on the main body of the island and away from wetland areas, it is probable that these sites will be thin, small in area, and of a specialized character.

Second, this study reinforces a hypothesis suggested by Dobbs (1985). This hypothesis suggests that large mound groups generally have village sites associated with them. Further, it would appear that where mound groups are situated near a body of water, the village site will be between the mounds and the water itself. This is true at the Mero site (47PI02), the Adams site (47PI12), the Bryan site (21GD4), the Silvernale site (21GD3), and the Energy Park site (21GD158). The discovery of a prehistoric component within 21GD75 by Birk (1984) and the presence of another Woodland site (21GD173) between 21GD75 and Sturgeon Lake during this survey would seem to lend additional credibility to this hypothesis.

Finally, the information about natural stratigraphy allows us to make some preliminary statements about the possibility of the existence of buried sites on Prairie Island.

The main portion of Prairie Island, at least within the project area, was formed by the deposit of glacial outwash sediments (predominantly sands and gravels) during the early Holocene. Auger testing throughout this area indicates that there has not been significant deposition of alluvial materials over the outwash deposits since the formation of the island. Since buried sites in alluvial settings are normally found on ancient levee's or point bars, it is unlikely that buried sites exist on

the main portion of the island.

However, there has been a significant amount of both erosion and aggradation along the edges of the lakes, streams, and old drainageways that border the island. These areas may contain deeply buried sites. It would be inappropriate to assume that these sites have been destroyed by erosion resulting from higher water levels created by the lock and dam system on the Mississippi. Certain portions of the shoreline around the island are eroding at a rapid rate. The eastern shoreline of Sturgeon Lake, for example, is eroding substantially. This erosion is adversely affecting the mounds and habitation debris in 21GD75 (see Birk 1984; 1985). However, IMA archaeologists noted that the shoreline on the northern edge of Sturgeon Lake in the vicinity of 21GD173 actually seems farther north than it was when mapped by Lewis in 1885. It is possible that there is increased deposition of alluvial sediments along this shore and that sites may be buried beneath these sediments. This observation is tentative, and more detailed work is obviously required.

RECOMMENDATIONS

1.) 21GD173 is a Late Woodland site situated along the northern shoreline of Sturgeon Lake and immediately north of site 21GD75. This definition of the site is based on the presence of cultural debris found in six shovel tests spaced at 15 meter intervals.

The Late Woodland period in the Lake Pepin area is very poorly known. 21GD173 has the potential to provide significant scientific information about this period. We recommend that a Phase 2 archaeological survey be conducted at this site. The goal of this survey would be to evaluate the eligibility of the site for nomination to the National Register of Historic Places. Tasks to be accomplished during this evaluation should include: a.) more precise definition of the spatial limits of 21GD173; b.) more clearly delineate the cultural affiliation of the site; c.) determine whether or not there are intact subsurface deposits of cultural material at the site; d.) determine the effects of erosion and/or aggradation on the site; e.) examine the relationship of this site to the mounds and prehistoric component within 21GD75.

Field techniques should include additional shovel testing. This would include shovel testing both within the northern portion of 21GD75 along the shoreline of Sturgeon Lake, if this met with the approval of the Prairie Island Community, and within the immediate vicinity of 21GD173. A maximum of 50 additional shovel tests would be required. Because of the heavy clay soils, high water table, and high density of roots and underbrush in the area, this would require ten person-days to complete.

This survey should also include the excavation of a minimum of five formal one by one excavation units within the site boundaries. The

location of these units should be selected after the shovel testing is completed. Given the field conditions in the area, each excavation unit would require three person-days to complete. Therefore, excavation of five units would require 15 person-days for completion.

Additional coring should be conducted in the vicinity of the site to evaluate the depth of cultural deposits in this area. If possible, this coring should be conducted in consultation with a geomorphologist or soil scientist. A maximum of six person-days should be required to complete this aspect of the study.

Laboratory analysis of the materials recovered during the study should require a maximum of an additional 10 person-days.

In addition, a principal investigator would be involved in this project for an estimated period of 10 days and a geomorphological consultant would be involved for 5 days.

Assuming reasonable wage and salary levels, housing and travel costs, and an indirect cost figure of 50%, a Phase II survey of 21GD173 should cost approximately \$7,000.

2.) 21GD75 contains a number of earthen prehistoric mounds. A Phase II archaeological study should be conducted in cooperation with the Prairie Island Medewakaton Sioux Community. The goals of this study would be to determine whether the mounds within the site are burial mounds or other types of prehistoric earthworks. Non-destructive remote-sensing studies (e.g. soil resistivity) could be employed to determine the presence or absence of refilled pits within the mounds.

If soil resistivity studies are used, the recommended spacing of the resistivity probes should not be greater than .5 meters.

Soil resistivity studies should require approximately one person-day per mound. An additional one person-day per mound would be required for data analysis and report preparation. Costs for the study should be \$250 per mound for a soil resistivity study of the type discussed above. Given the large number of mounds in 21GD75, it might be desirable to study only a selected number of mounds within the group. At minimum, Mound 3 and Mound 25 should be included within the sample selected for evaluation.

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SCOPE OF WORK
PHASE I CULTURAL RESOURCES INVESTIGATION
OF A DREDGE DISPOSAL SITE AT PRAIRIE ISLAND, MINNESOTA

1.00 INTRODUCTION

1.01 The Contractor will undertake a Phase I cultural resources investigation of a dredge disposal site to be located on Prairie Island in Pool 3 of the Upper Mississippi River Basin.

1.02 This investigation partially fulfills the obligations of the Corps of Engineers (Corps) regarding cultural resources, as set forth in the National Historic Preservation Act of 1966 (Public Law [PL] 89-665), as amended; the National Environmental Policy Act of 1969 (PL 91-190); Executive Order (EO) 11593 for the "Protection and Enhancement of the Cultural Environment" (Federal Register, May 13, 1971); the Archeological and Historical Preservation Act of 1974 (PL 93-291); the Advisory Council on Historic Preservation "Regulations for the Protection of Historic and Cultural Properties" (36 CFR, Part 800); and the applicable Corps regulations (ER 1105-2-50).

1.03 The laws listed above establish the importance of Federal leadership, through the various responsible agencies, in locating and preserving cultural resources within project areas. Specific steps to comply with these laws, particularly as directed in PL 93-291 and EO 11593, are being taken by the Corps "... to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archeological significance." A part of that responsibility is to locate, inventory, and nominate to the Secretary of the Interior all such sites in the project area that appear to qualify for listing on the National Register of Historic Places.

1.04 EO 11593 and the 1980 amendments to the National Historic Preservation Act further direct Federal agencies "... to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered." In addition, the Corps is directed to administer its policies, plans, and programs so that federally and non-federally owned sites, structures, and objects of historical, architectural, or archeological significance are preserved and maintained for the inspiration and benefit of the people.

1.05 This cultural resources investigation will serve several functions. The report will be a planning tool to aid the Corps in meeting its obligations to preserve and protect our cultural heritage. It will be a comprehensive, scholarly document that not only fulfills federally mandated legal requirements but also serves as a scientific reference for future professional studies. It will identify resources that may require additional investigations and that may have potential for public-use development. Thus, the report must be analytical, not just descriptive.

2.00 PROJECT DESCRIPTION

2.01 Lock and Dam 3 is on the Upper Mississippi River, approximately 797 Miles above the mouth of the Ohio River, 6 miles above Red Wing, Minnesota, and 42 miles below St. Paul, Minnesota. The upper approach to the lock is on the outside of a sharp bend, which creates a crosscurrent in the navigation channel. Navigation conditions for downbound tow boats approaching the lock are difficult and hazardous because of the crosscurrent, which pushes tow boats away from the lock and towards the dam. Accidents have occurred as a result of barge tows losing control while maneuvering for the approach to the lock.

2.02 Both structural and nonstructural alternatives have been evaluated. The proposed alternative to correct this problem is the construction of a rock guard dike between the lock chambers and the dam. Approximately 250,000 cubic yards of material will need to be excavated from the channel upstream of the dam. A 195-acre disposal area located on Prairie Island is the preferred disposal site for the excavated material.

2.03 This proposed disposal area is owned in fee title by the Prairie Island Indian community. They support having the disposal placed in this area. They have also informed the St. Paul District that there are several burial mounds that exist in this area. However, close coordination with the Prairie Island Sioux will still be required during the field portion of this contract to insure that their needs and desires are adequately considered.

2.04 The burial mounds reported by the Prairie Island Indian community as existing within the proposed disposal area are a portion of site 21GD75. This site consists of approximately 45 mounds scattered throughout the S 1/2, Sec 32, T114N, R15W. These mounds have been disturbed by agricultural activities in the past and are not all clearly visible.

2.05 During 1984 and 85, Mr. Doug Birk of the Institute for Minnesota Archaeology conducted field investigations in the area of the proposed disposal site in an attempt to relocate 21GD88 which is a suspected French-Period fort site in Prairie Island. Mr. Birks efforts at this time concentrated in the SE 1/4, Sec 32, T114N, R15W. It is felt by Mr. Birk that the site may be located in the disposal site.

2.06 In addition to the two sites discussed above, Prairie Island contains a high concentration of archeological sites. Because of this, it is likely that additional previously unknown sites may exist within the proposed disposal site area.

2.07 The 195-acre parcel that is proposed for disposal has been previously used for agricultural crops. The area is now fallow, and has not been plowed for 2 years. Prior to conducting the survey, the Corps will have the area plowed so that surface reconnaissance will be possible rather than extensive shovel testing of the area. However, some shovel testing may be necessary to determine the vertical extent of cultural deposits and the extent of past agricultural disturbances.

2.08 The Contractor will notify the Contracting Officer of the result of the field survey immediately upon completion of the field work. This is necessary because additional testing to determine the significance of resources located during the survey may need to be completed during the 1986 field season.

3.00 DEFINITIONS

3.01 Cultural Resources include any building, site, district, structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

3.02 A Phase I Cultural Resources Investigation is an intensive, on-the-ground study of an area sufficient to determine the number and extent of the resources present and their relationships to project features. It will provide (1) data adequate to assess the general nature of the sites present; (2) recommendations for additional testing of those resources that may provide important cultural and scientific information; (3) detailed mapping of any surface features such as burial mounds; and (4) detailed time and cost estimates for Phase II testing.

3.03 Phase II Testing is the intensive testing of a resource that may provide important cultural or scientific information. This testing will result in (1) information adequate to determine whether the resource is eligible for inclusion on the National Register of Historic Places; (2) a Phase III mitigation plan for any eligible resources that will undergo a direct or indirect impact; and (3) detailed time and cost estimates for the mitigation.

3.04 Phase III Mitigation is the mitigation of the direct or indirect impacts of construction upon eligible sites through the systematic removal of data. It typically includes the excavation of either complete cultural deposits or a systematic sample of them and the thorough analysis and interpretation of the data recovered. The excavation, analysis, and interpretation methods must be adequate to address the important research questions based on which the resource was determined eligible. In addition, because the mitigation process destroys the resource, data should be recovered that may be needed to address future research questions.

4.00 SURVEY REQUIREMENTS

4.01 The Contractor will conduct a **Phase I cultural resources investigation** at Prairie Island, Minnesota, in accordance with Sections 2.00 and 3.02 above.

4.02 The Contractor's work will be subject to the supervision, review, and approval of the Contracting Officer's representative.

4.03 The Contractor will employ a systematic, **interdisciplinary approach** in conducting the study, using techniques and methods that represent the current state of knowledge for the appropriate disciplines. The Contractor

will provide specialized knowledge and skills as needed, including expertise in archeology and other social and natural sciences.

4.04 The Contractor will provide all **materials and equipment** necessary to perform the required services expeditiously.

4.05 The Contractor's survey will be an on-the-ground examination sufficient to **determine the number and extent of any cultural resources** present, including standing structures as well as prehistoric and historic archeological sites.

4.06 The Contractor's survey will include **surface inspection** in areas where surface visibility is adequate to reveal any cultural materials that are present and **subsurface testing** in all areas where surface visibility is inadequate. Subsurface investigation will include shovel testing, coring, soil borings, cut bank profiling, or other appropriate methods. If the field methods used vary from those that are required, they must be described and justified in the Contractor's report.

4.07 The **survey interval** required for subsurface testing is 15 meters (50 feet). However, this interval may vary depending upon field conditions, site density, or size. If a larger interval is used, this decision must be justified in the Contractor's report.

4.08 The Contractor will screen all subsurface tests through 1/4-inch mesh hardware cloth.

4.09 The Contractor will **recommend any Phase II testing** measures that are warranted, including time and cost estimates.

4.10 If it becomes necessary in the performance of the work and services, the Contractor will, at no cost to the Government, secure the **rights of ingress and egress** on properties not owned or controlled by the Government. The Contractor will secure the consent of the owner, or the owner's representative or agent, in writing prior to effecting entry on such property. If requested, a letter of introduction signed by the District Engineer can be provided to explain the project purposes and request the cooperation of landowners. Where a landowner denies permission for survey, the Contractor must immediately notify the Contracting Officer's representative and must describe the extent of the property to be excluded from the survey.

4.11 The Contractor will return all surveyed areas as closely as practical to presurvey conditions.

4.12 The Contractor must **keep standard records** that include field notes and maps, site survey forms, subsurface testing forms, and photographs.

4.13 State site forms will be prepared for all sites discovered during the survey, and records on previously reported sites will be updated if new information is obtained. Data should be included on the present condition of each site and on the contents and locations of any collections from it.

The Contractor will also submit all site forms and updates to the appropriate State agency.

4.14 Cultural materials and associated records from the study should be curated at an institution that can ensure their preservation and make them available for research and public view. Curation should be within the State and as close as possible to the project area. The Contractor will be responsible for making curatorial arrangements, coordinating them with the appropriate officials of the Minnesota State Historic Preservation Office, and obtaining approval from the Contracting Officer's representative.

5.00 GENERAL REPORT REQUIREMENTS

5.01 The Contractor will submit the following documents, described in this section and Section 6.00: a field report, field notes, a draft contract report, and a final contract report.

5.02 The Contractor's field report will be a brief summary of the nature, extent, and results of the field work conducted. It may be in the form of a letter to the Contracting Officer's representative.

5.03 The Contractor's field notes will include legible copies of important notes and records kept during the investigation. Especially important are the daily field journal of the Principal Investigator or field director, field site survey forms, and subsurface testing forms. One copy of these notes should be submitted to the Contracting Officer's representative with the draft contract report but should not be bound into the report.

5.04 The draft contract report will detail the approach, methods, and results of the investigation, and make recommendations for further work. It will be submitted to the Contracting Officer's representative, who will review it and forward it to other appropriate agencies for review. Comments will be returned to the Contractor, who will make the necessary revisions and submit the final contract report.

5.05 The Contractor's draft and final reports will include the following sections, as appropriate to the study. The length of each section depends on the level of detail required of the study and the amount of information available. The reports should be as concise as possible, yet provide all the information needed for evaluating and managing the project and for future reference.

a. Title page: The title page will provide the following information: the type of study; the types of cultural resources assessed (archeological, historical, and architectural); the project name and location (county and State); the date of the report; the Contractor's name; the contract number; the name of the author(s) and/or Principal Investigator; the signature of the Principal Investigator; and the agency for which the report is being prepared.

b. Management summary: This section will provide a concise summary of the study, containing all the information needed for management of the

project. This information will include the reason the work was undertaken, who the sponsor was, a brief summary of the scope of work and budget, a summary of the field work and lab analysis, the limitations of the study, the results, the significance of the results, recommendations for further work, and the repository for records and artifacts.

c. Table of contents

d. List of figures

e. List of plates

f. Introduction: This section will identify the sponsors (Corps of Engineers) and their reason for the study and present an overview of the study with each site located on USGS quad maps. It will also define the location and boundaries of the study area (using regional and area-specific maps); define the study area within its regional cultural and environmental context; reference the scope of work; identify the institution that did the work and the number of people and person-days/hours involved; give the dates when the various phases of the work were completed; identify the repository of records and artifacts; and provide a brief outline of the report and an overview of its major goals.

g. Previous archeological and historical studies: This section will briefly summarize and evaluate previous archeological and historical research in the study area including the researchers, dates, extent, adequacy, and results of past work and any cultural/behavioral inferences derived from it.

h. Environmental background: This section will briefly describe the current and prehistoric environment of the study area, including its geology, vegetation, fauna, climate, topography, physiography, and soils. The relationship of the environmental setting to the area's prehistory and history should be stressed. The level of detail in this section will be commensurate with that of the other report sections.

i. Theoretical and methodological overview: This section will state the goals of the sponsor and the researcher, the theoretical and methodological orientation of the study, and the research strategies that were applied to achieve the goals.

j. Field methods: This section will describe all field methods, techniques, and strategies and the reasons for using them. It will also describe field conditions, relevant topographic/physiographic features, vegetation conditions, soil types, stratigraphy, general survey results, and the reasons for eliminating any uninvestigated areas.

k. Laboratory and analysis methods: This section will explain the laboratory methods employed and the reasons for selecting them. It will reference accession or catalog numbers of any collections, photographs, or field notes obtained during the study and state where these materials are permanently housed. It will also describe and justify the specific

analytical methods used, including any quantitative analysis of the data, and discuss limitations or problems with the analysis.

l. Results: This section will describe all cultural resources found during the study. It will minimally include each site's description (including size, depth, and artifact density); its location (USGS quad, legal description, elevation, and address if appropriate); the amounts and types of remains recovered; its environmental setting; its current condition; the direct and indirect impacts of the project upon it; and any additional interpretations (e.g., site type, cultural components, and human behavioral information).

m. Evaluation and conclusions: This section will formulate conclusions about the location, size, condition, and distribution of the resources found; their relationships to other sites in the area; and their possible importance in terms of local and regional prehistory, protohistory, and history. It will also relate the results of the study to the stated goals; identify any changes in the goals; assess the reliability of the analysis; and discuss the potential of and goals for future research.

n. Recommendations: This section will recommend any further work deemed necessary. It will summarize Phase II evaluation measures that would be needed to determine whether specific resources are eligible for the National Register of Historic Places, as well as a time and cost estimate for this work. It will also describe any areas that were inaccessible, and recommend future treatment of them. If the Contractor concludes that no further work is needed at any site, the evidence and reasoning supporting this recommendation will be presented.

o. References: This section will provide bibliographic references (in American Antiquity format) for every publication cited in the report. References not cited in the report may be listed in a separate "Additional References" section.

p. Appendix: This section will include the Scope of Work, resumes of project personnel, copies of all correspondence relating to the study, and any other pertinent information referenced in the text. It will also include State site forms for all sites identified during the survey, including find spots and previously recorded sites.

q. Figures: The location of all sites and other features discussed in the text will be shown on a legibly photocopied USGS map bound into the report. In addition, the locations of all subsurface tests will be indicated on maps of appropriate scale and detail and keyed to the subsurface testing forms included with the field notes. Other recommended figures are regional and project maps, photographs of the project area, and line drawings or photographs of diagnostic artifacts, structures, and unit or feature profiles.

r. Tables: The report should include tables of cultural materials by site and provenience (for example, excavation unit and level). Information

that may require more detailed tabulation includes lithic tool types and raw materials, ceramic attributes, and floral and faunal remains.

5.06 A cover letter submitted with the final contract report will include the project budget.

5.07 The Contractor will submit to the Contracting Officer's representative the negatives for all photographs that appear in the final report.

6.00 REPORT FORMATS

6.01 There are no specific format requirements for the field report. A letter report is usually sufficient.

6.02 There are no format requirements for the field notes; however, they must be legible. If the original handwritten notes are illegible, they should be typed.

6.03 Formats for both the draft and final contract reports are as follows:

a. The Contractor will present information in whatever textual, tabular, or graphic forms are most effective for communicating it.

b. The draft and final reports will be divided into easily discernible chapters, with appropriate page separations and headings.

c. The report text will be typed, single-spaced (the draft report should be space-and-one-half or double-spaced), on good quality bond paper, 8.5 inches by 11.0 inches, with 1.5-inch binding and bottom margins and 1-inch top and outer margins, and may be printed on both sides of the paper. All pages will be numbered consecutively, including plates, figures, tables, and appendixes.

d. All illustrations must be clear, legible, self-explanatory, and of sufficiently high quality to be reproduced easily by standard xerographic equipment, and will have margins as defined above. All maps must be labeled with a caption/description, a north arrow, a scale bar, township and range, map size and dates, and map source (e.g., the USGS quad name or published source). All photographs or drawings should be clear, distinct prints or copies with captions and a bar scale.

7.00 MATERIALS PROVIDED

7.01 The Contracting Officer's representative will furnish the Contractor with access to any publications, records, maps, or photographs that are on file at the St. Paul District headquarters.

8.00 SUBMITTALS

8.01 The field work completion date for this project will be 19 September 1986. The Contractor will contact the Contracting Officer's representative

at least 7 days before the field work begins to discuss the work schedule and plans.

8.02 The Contractor will submit reports according to the following schedules:

a. Field report: A brief letter report summarizing the field work and its results will be submitted to the Corps of Engineers within 10 working days of completion of the field work.

b. Draft contract report: Seven copies of the draft contract report will be submitted no later than 60 calendar days after completion of the field work. The draft contract report will be reviewed by the Corps of Engineers, the State Historic Preservation Officer, the State Archeologist, and the National Park Service. The draft contract report will be submitted according to the report and contract specifications outlined in this scope of work.

c. Project field notes: One legible copy of all the project field notes will be submitted with the draft contract report.

d. Final contract report: The original and 15 copies of the final report will be submitted 60 days after the Contractor receives the Corps of Engineers comments on the draft report. The final report will incorporate all the comments made on the draft report.

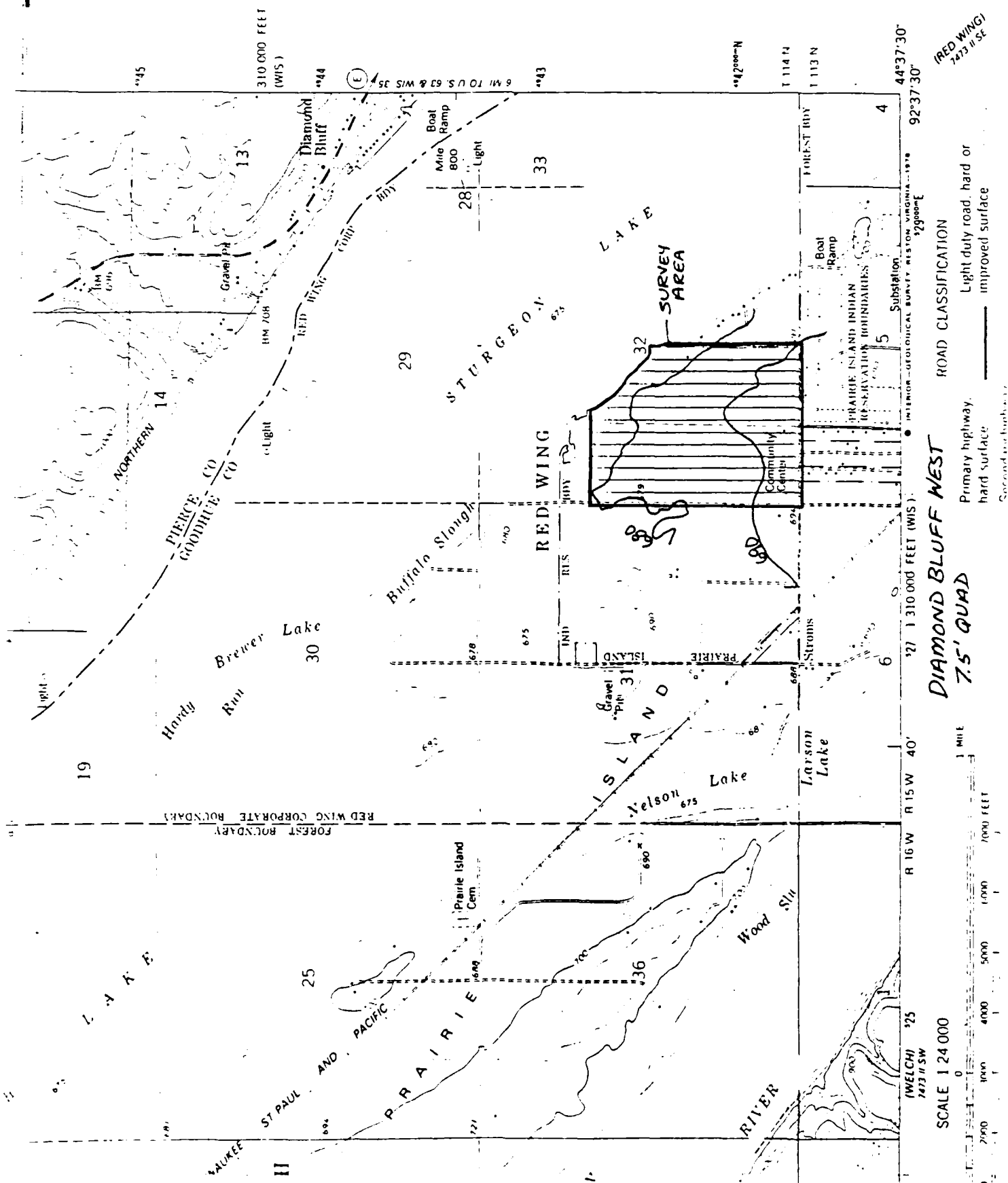
9.00 CONDITIONS

9.01 Failure of the Contractor to fulfill the requirements of this Scope of Work will result in rejection of the Contractor's report and/or termination of the contract.

9.02 Neither the Contractor nor his representative shall release any sketch, photograph, report, or other materials of any nature obtained or prepared under the contract without specific written approval of the Contracting Officer's representative prior to the acceptance of the final report by the Government. Dissemination of survey results through papers at professional meetings and publication in professional journals is encouraged. However, professional discretion should be used in releasing information on site locations where publication could result in damage to cultural resources.

9.03 All materials, documents, collections, notes, forms, maps, etc., that have been produced or acquired in any manner for use in the completion of this contract shall be made available to the Contracting Officer's representative upon request.

9.04 Principal investigators will be responsible for the validity of material presented in their reports. In the event of controversy or court challenge, the principal investigator(s) will be placed under separate contract to testify on behalf of the Government in support of the findings presented in their reports.



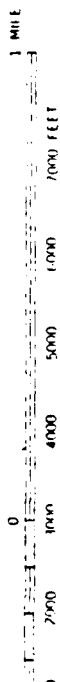
RED WING
1473 N SE

ROAD CLASSIFICATION

Primary highway. Light duty road, hard or hard surface. Improved surface.

DIAMOND BLUFF WEST
7.5' QUAD

SCALE 1:24,000



APPENDIX TWO: RESUMES OF PROJECT PERSONNEL

CURRICULUM VITA

CLARK A. DOBBS

Personal information

PII Redacted

Office: The Institute for Minnesota Archaeology, Inc., 1313 5th Street SE,
Suite 205, Minneapolis, MN 55414; 612/623-0299

Education

- 1973 - B.A. in Anthropology, Indiana University, Bloomington IN
- 1979 - M.A. in Anthropology, University of Minnesota, Minneapolis, Minnesota
- 1984 - Ph.D in Anthropology, University of Minnesota, Minneapolis, MN

Archaeological field experience and employment

- 1975 - Indiana University Field School. Prairie Creek Site - a deeply stratified late-Pleistocene site, 6/15 - 8/15.
- 1975 - Field Archaeologist. Clark Maritime Center Project, Clark County, IN. Deep testing of alluvial bottoms to locate and assess prehistoric cultural resources. Indiana University, 9/1 - 11/1.
- 1976 - Field Archaeologist. Archaeological reconnaissance of Twin-Rush, Delaney Creek, and Hall-Flat Creek watersheds. Indiana University, 12/75 - 1/76.
- 1976 - Field Director. Southwest Jefferson County, Kentucky. Local Flood Protection Project. Deep testing of alluvial deposits along four miles of the Ohio River. Environmental Consultants, Inc., 3/1 - 7/15.
- 1976 - Field Director. Archaeological reconnaissance of the Southern Tier Expressway, western New York State. Environmental Consultants, Inc., 7/15 - 8/15.
- 1977 - Field Archaeologist. Archaeological investigations of the Rum River Bridge Project. The Science Museum of Minnesota, 4/1 - 4/15.
- 1977 - Field Assistant. Testing and excavation of prehistoric sites near Granite Falls, MN, The Science Museum of Minnesota, 6/1 - 8/20.
- 1977 - Field Archaeologist. Archaeological reconnaissance of the Big Sandy Lake area, Aitkin County, MN The Science Museum of Minnesota, 8/20 - 9/25.

1978 - Associate Field Director. Sanderson Canyon Watershed Project, Terril, Brewster, and Pecos Counties, TX. Environmental Consultants, Inc., 6/1 - 9/15.

1978 - Research Assistant. Development of metrical data and linear regression equations for a number of individuals from different species of fish. The Science Museum of Minnesota, 10/15 - 12/15.

1979 - Field Assistant. University of Minnesota Archaeological Field School. Excavations of 21FA2 in Faribault County, MN. The University of Minnesota, 6/1 - 7/15.

1979 - Field Technician. Archaeological reconnaissance of the Hiawatha National Forest, Upper Peninsula, MI. Soil Systems, Inc., 9/1 - 10/1. Preparation of background chapter, report on survey of Chippewa National Forest, MN.

1980 - Field Director. Archaeological reconnaissance, Center Creek Locality, Winnebago, MN. Location and systematic collection of archaeological sites affiliated with Oneota Tradition. Dissertation research, May and June.

1980 - Field Director. Archaeological reconnaissance, Trunk Highway 53 Project. Initial survey of Highway 53 from Virginia, MN to International Falls, MN, 6/15 - 10/1. Supervised by Leslie D. Peterson, Trunk Highway Archaeologist, Minnesota Historical Society.

1980 - Archaeological reconnaissance, Chaska, MN. U. S. Army Corps of Engineers proposed flood control project. Directed by Elden Johnson, University of Minnesota, October.

1980 - Battle Creek City Park Archaeological reconnaissance, City of St. Paul. Directed by Guy E. Gibbon, October.

1981 - Field Director. Archaeological reconnaissance, Center Creek Locality, Winnebago, MN. Continued research into Oneota settlement patterns with assistance of University students and Minnesota Archaeological Society volunteers, May, June and September.

1981 - Field Director. Test excavations at 21M015, a Middle to Late Woodland site in north central Minnesota. Supervised by Leslie D. Peterson, July - August.

1982 - Archaeological survey in the vicinity of LaCrosse, WI

1983 - Chair and Organizer, Conference on western Oneota Ceramics, Red Wing, MN, April.

1983-1984 - Research Associate, The Institute for Minnesota Archaeology, Inc.

1983-1984 - Principal Investigator for research in south-central Minnesota at the Center Creek Locality (Blue Earth River) and along the upper Mississippi River (Red Wing Locality).

1983-1985 - Project Director, Bryan Archaeological Project.

1985 - Executive Director, The Institute for Minnesota Archaeology, Inc., 1313 Fifth Street SE, Suite 205, Minneapolis, MN 55414.

Teaching experience

Southwest State University/The Science Museum of Minnesota, teaching assistant, archaeological field school held in the vicinity of Granite Falls, MN

Department of Anthropology, University of Minnesota, Minneapolis, MN

Teaching Assistant:

Introduction to Social and Cultural Anthropology, Fall 1976, 1977, 1978;
Introduction to Physical Anthropology and Archaeology, Winter 1977, 1979;
Indians of North America, spring 1977, winter 1978; North American
Archaeology, spring 1978; Field school, summer session 1979.

Instructor:

Introduction to Physical Anthropology and Archaeology, fall 1980, 1981
(Continuing Education and Extension); summer 1981; Honors Section, fall 1981.

Environmental Archaeology, Spring 1980, 1981.

Prehistory of North America, Winter 1982

Minnesota Prehistory, Winter 1984.

Several non-credit courses through University of Minnesota including: What Is an Archaeological Laboratory; Settlement Studies in Prehistory; The Prairie and Prehistoric Peoples at Red Wing, MN.

Director, University of Minnesota Archaeological Field School, The Adams Site, June - July 1985.

Director, Institute for Minnesota Archaeology Summer Field Program in Public Archaeology, June - August 1985.

Report preparation and research reports

1971 - Glass Trade Beads from Quiaatenon; a Preliminary Analysis. Glenn A. Black Laboratory of Archaeology. Ms. on file.

1973 - Remember Man as You Pass By: Grave Art in Warren and Fountain Counties, IN. Original field research and documentation of early handcarved tombstones. Ms. on file with author.

1974 - Trade Beads at Quitaenon Revisited: Additional Data, Additional Problems. Analysis of additional data, with expanded interpretation. Ms. on file, Tippecanoe County Historical Society, Lafayette, IN.

1976 - An Assessment of the Cultural Resources of the Delaney Creek Area, Washington, County, IN. Report on file at Glenn A. Black Laboratory of Archaeology, Indiana University.

1976 - An Assessment of the Cultural Resources of the Twin-Rush Creek Area, Washington County, IN. Report on file with Glenn A. Black Laboratory of Archaeology, Indiana University. With Randall L. Guendling.

1976 - Cultural Resources of Section 2, Southwest Jefferson County, KY, Flood Control Project. 200+ pages, 40+ maps. Report on file with U. S. Army Corps of Engineers, Louisville District, Louisville, KY.

1981 - An Archaeological Survey of Trunk Highway 53, Virginia to International Falls, MN. Report for MN/DOT prepared by the Minnesota Historical Society.

1981 - Test Excavations at 21M015: A Middle to Late Woodland Habitation Site in North-central Minnesota. Report submitted to Minnesota Historical Society for the Minnesota Department of Transportation.

1982-1985 - Assorted small contract reports

Publications

1971 - Museum Methods: a Syllabus. Co-author under direction of Dr. Wesley Hurt. Indiana University Museum.

1979 - Archaic Subsistence in Southwestern Minnesota: the View from Granite Falls. M.A. thesis, University of Minnesota.

1982 - Oneota Origins and Development: the Radiocarbon Evidence. In Oneota Studies, Guy E. Gibbon, ed.; Occasional Papers in Anthropology #1, Department of Anthropology, University of Minnesota.

1982 - Oneota Settlement Patterns in the Blue Earth River Valley, Minnesota. In Oneota Studies, Guy E. Gibbon, ed.; Occasional Papers in Anthropology #1, Department of Anthropology, University of Minnesota., Co-authored with Orrin C. Shane III.

1984 - Oneota Settlement Patterns in the Blue Earth River Valley, Minnesota. Ph.D. dissertation, University of Minnesota. (Accepted for publication as 1988 Memoir of the Plains Anthropological Association).

1985 - The Archaeology of the Bryan Site (ed.). Complete volume (43:2:1-62) of the Minnesota Archaeologist. Also author of Preface and Excavations at the Bryan Site: 1983-1984 in this number.

1985 - An Archaeological Survey of the City of Red Wing. Institute for Minnesota Archaeology Reports of Investigations #2.

1986 - Wisconsin mounds recorded by the Northwest Archaeological Survey and an evaluation of the Adams site (47PI12). Reports of Investigations No. 7, The Institute for Minnesota Archaeology, Mpls., MN.

1986 - Archaeological excavations at the Bryan site (21GD4), Goodhue County, Minnesota: 1983 and 1984. Reports of Investigations No. 8, Institute for Minnesota Archaeology, Mpls., MN.

Papers presented at meetings

1978 - Incremental structures of Bison Dentition as Indicators of Seasonality. Paper given at the Council for Minnesota Archaeology Conference, Hamline University, St. Paul, MN.

1980 - Oneota Settlement Patterns in the Blue Earth River Valley, South-central Minnesota. Paper given at the Midwest Archaeological Conference, Chicago, IL. With Orrin C. Shane III.

1981 - Oneota Origins and Development: the Radiocarbon Evidence. Paper presented at the Council for Minnesota Archaeology Spring Conference, Hamline University, St. Paul, MN.

1983 - Archaeological Investigations at the Bryan Site. Paper given at Mississippian Roundtable, in conjunction with the Midwest Archaeological Conference, Iowa City, IA, October.

1983 - Oneota and Upper Mississippian Cultures in Minnesota. Paper presented as part of the Oneota Symposium, Midwest Archaeological Conference, Iowa City, IA, October.

1986 - The Mississippian Presence in the Red Wing area, Minnesota. Paper presented at the Society for American Archaeology meetings as part of the symposium New perspectives on Cahokia: views from the peripheries. April, New Orleans, LA.

1986 - Microcomputer applications to the study of prehistoric earthworks at the Red Wing Locality. Poster session presented at the Workshop on Microcomputer Application in Archaeology, Society for American Archaeology meetings, April 23, New Orleans, LA.

Honors and awards

1970 - Phi Eta Sigma Academic Honorary, Indiana University.

1971-1973 - State of Indiana Academic Achievement stipend.

1979 - University of Minnesota Graduate School tuition scholarship.

1979-1982 - University of Minnesota Graduate School Dissertation Improvement Grant - \$1,000 for radiocarbon dates, maize analysis, travel.

1983 - University Computer Center, \$1,000 grant.

1983 - The Institute for Minnesota Archaeology, Writing grant - \$800.

Vita

November/1986

Personal DataPII Redacted Name: Kim Colette BreakeyEducation

B.A. Anthropology - Moorhead State University Fall 1980

Additional pertinent classes: Lithic Technology, Dr. Stanley A.
Ahler, University of North Dakota
Fall 1982

Advanced Laboratory Techniques,
Dr. Stanley A. Ahler Fall 1983

Field and Laboratory Experience

1980 (June) Archaeological Field School, Dr. M.G. Michlovic

(Oct-Nov) Laboratory Assistant, Dr. M.G. Michlovic

1981 (April-Nov) Field Archaeological Assistant, University of
North Dakota, Dr. Michael Gregg

(Dec-April 1983) Laboratory Archaeological Assistant, UND

1983 (April-Sept) Promoted to Advanced Laboratory Assistant, UND

(Oct-March 1984) Assumed Editorial Assistant duties for
final report preparation, UND. Report size: 4 volumes, 3500
pages.

1984 (May-Sept) Field Assistant, Institute for Minnesota
Archaeology, Dr. Clark Dobbs and Douglas A. Birk Projects:
The Bryan Site (21GD4), Spring Creek Survey, "Fort Duquense"
(21MO20), Pike's Fort (21MO21)

(Nov-March 1985) Laboratory Research Assistant, IMA
Projects: processing and preservation of artifacts from
21MO20 and Pike's Fort.

1985 (April-May) Field Assistant, Rice County Survey, Dr. Barbara
H. O'Connell

(June-Dec) Field and Laboratory Assistant, IMA Projects:
continued excavation at 21MO20 and Pike's Fort and
subsequent artifact processing and preservation; research

project for Wisconsin Historical Society on Hill/Lewis Mound data

- 1986 (Jan-Nov) Field and Laboratory Assistant, IMA Projects: Continued excavation and processing and preservation of artifacts from 21M020; geomorphological survey of three river systems in southwestern Minnesota (SW639); limited testing at Red Wing Mississippian village site (21GD158)

Publications

- 1981 A description of some ceramics from the Middle Red River valley, Minnesota-North Dakota. The Minnesota Archaeologist. Vol 40, Number 1, pp 33-41. Minnesota Archaeological Society, Building 27, Fort Snelling, St. Paul.
- 1985 Stanley A. Ahler, junior author
An analysis of pottery from On-A-Slant village, Fort Abraham Lincoln State Park, North Dakota. Journal of the North Dakota Archaeological Association, Vol 2, pp 1-36. University of North Dakota, Grand Forks.

References

- | | |
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EVAN C. ENGWALL

PII Redacted

EDUCATION

Graduate Studies in Anthropology, University of Texas at San Antonio, 9/85-5/86. (G.P.A. 4.0).

B.A., Gustavus Adolphus College, Cum Laude, Majors in International Economics and French, May 1985.

Institute for European Studies, including coursework at the University of Paris-Sorbonne, 9/83-5/84.

EMPLOYMENT HISTORY

Research Assistant and Field Archaeologist, Institute for Minnesota Archaeology, Minneapolis, MN, 6/86-present.

Technical Laboratory Staff III, Center for Archaeological Research, University of Texas at San Antonio, 9/85-5/86.

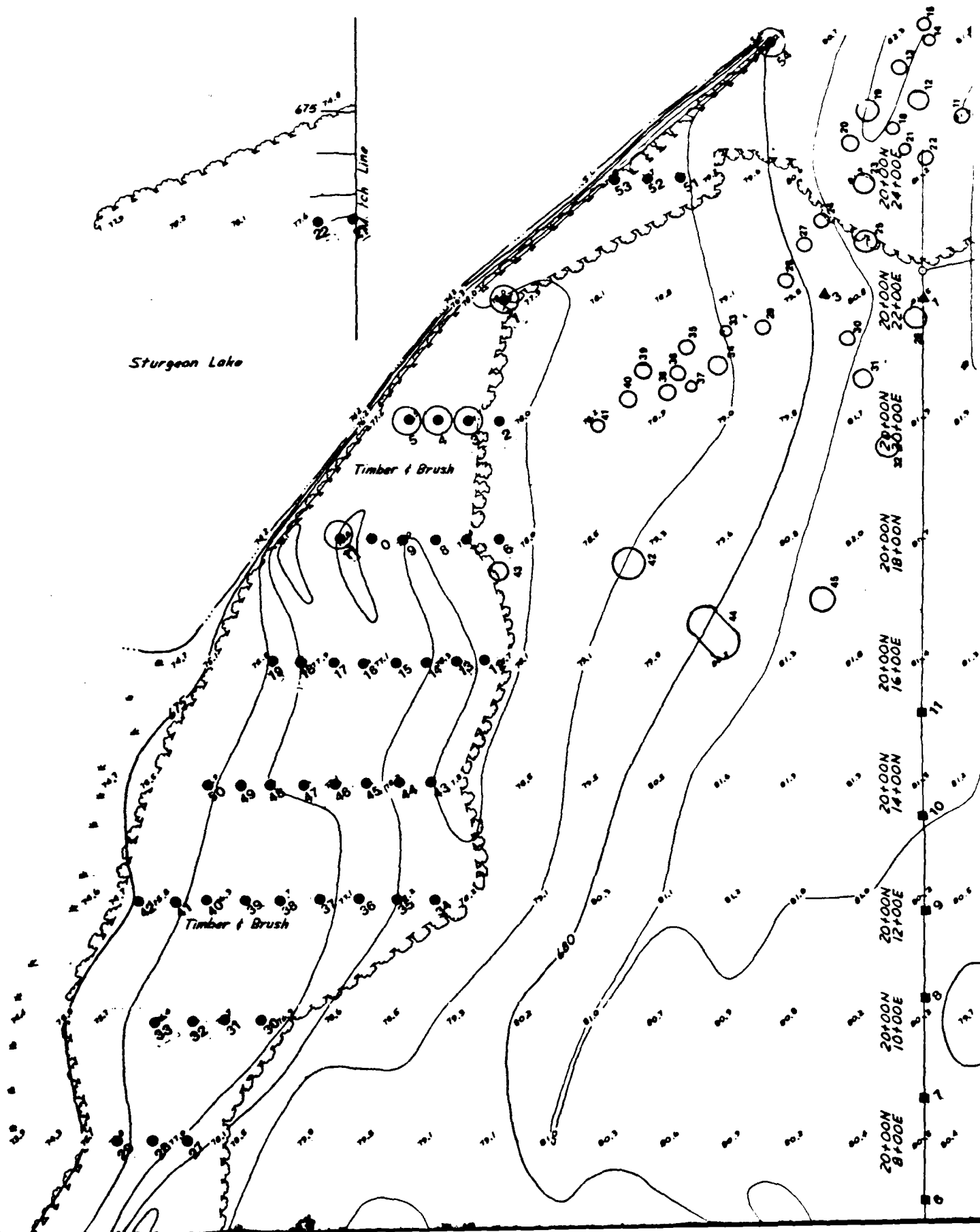
French Tutor, French Department, Gustavus Adolphus College, St. Peter, MN 9/84-5/85.

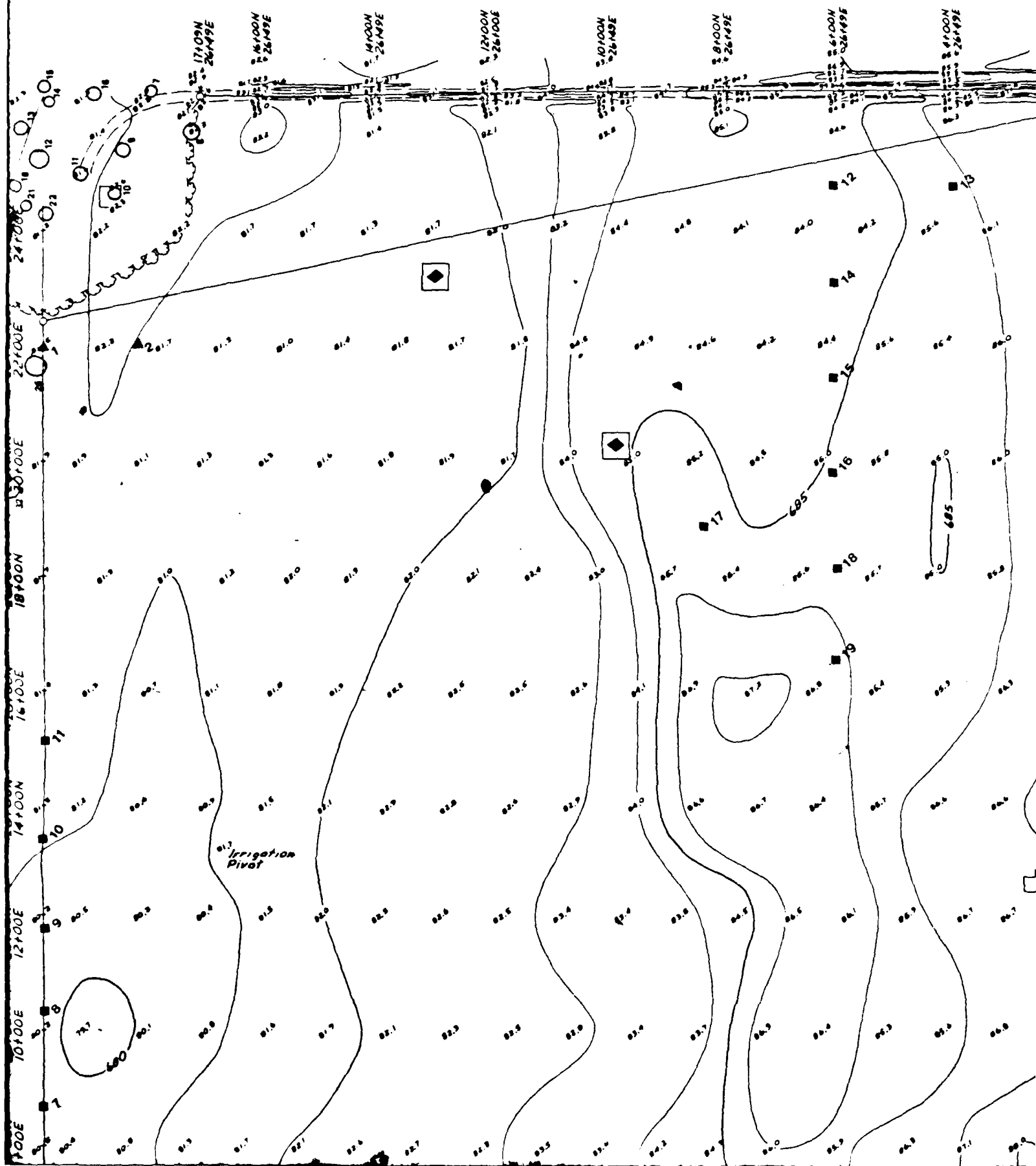
Spanish Tutor, Spanish Department, Gustavus Adolphus College, St. Peter, MN 9/84-5/85.

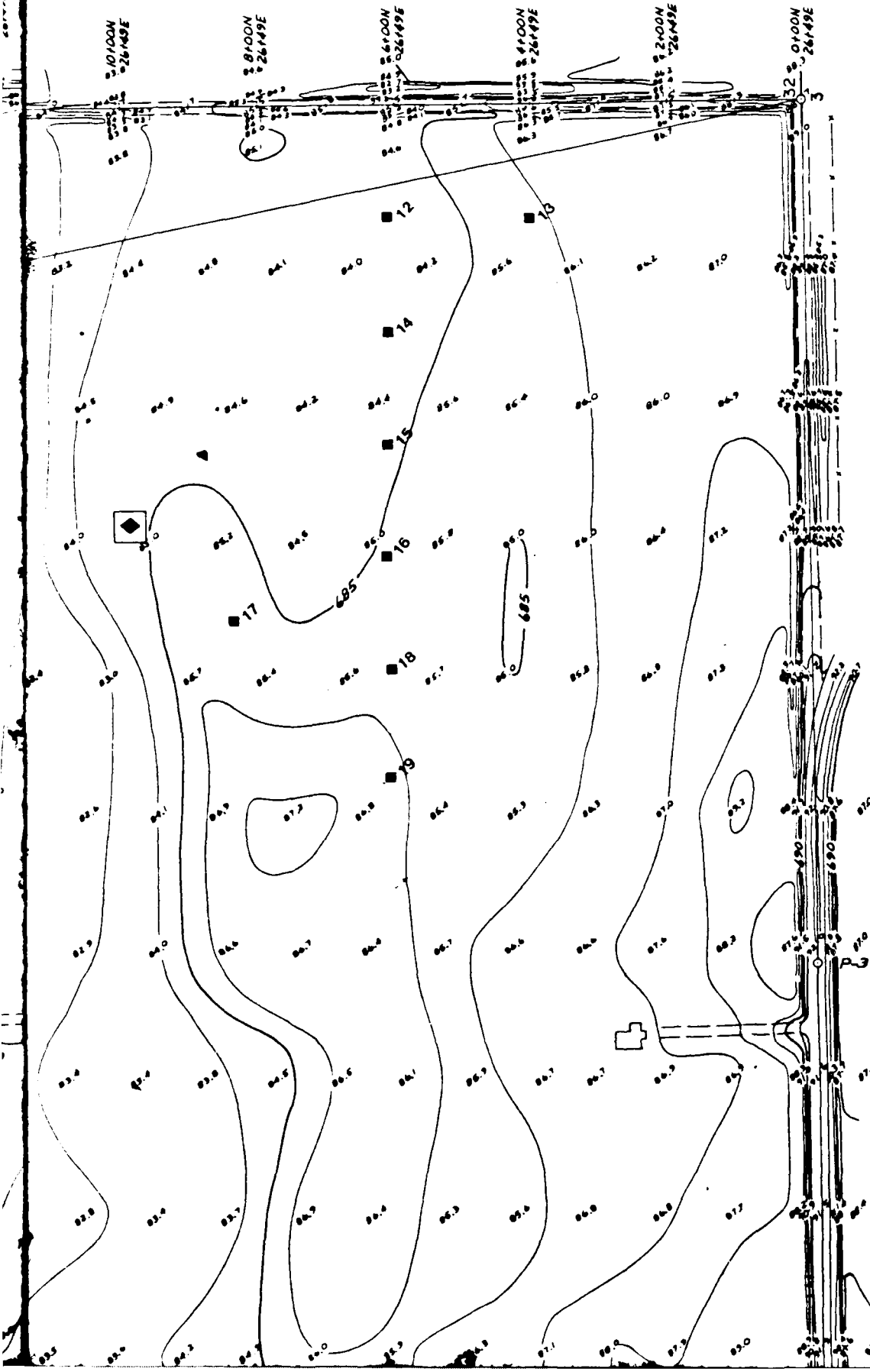
Assistant Librarian, Institute for European Studies, Paris, France, 9/83-5/84.

Shipping and Receiving Clerk, Medical Arts Press, Minneapolis, MN, Summers of 1980-1983.

References available upon request.

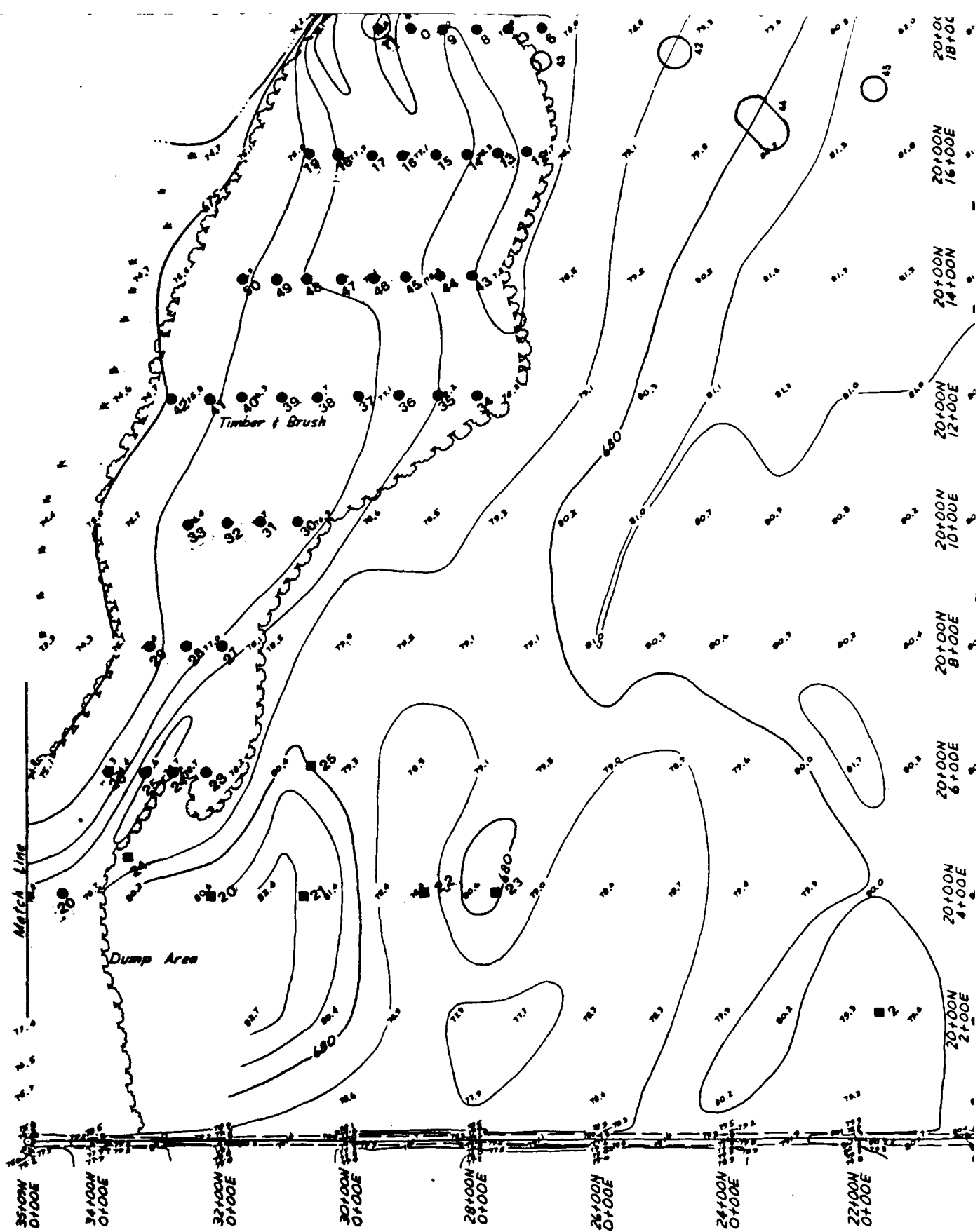






The Institute For Minnesota Archaeology
 Prairie Island Survey and Testing
 October 1986

- Shovel Test (Negative)
- Positive Shovel Test (Cultural Materials)



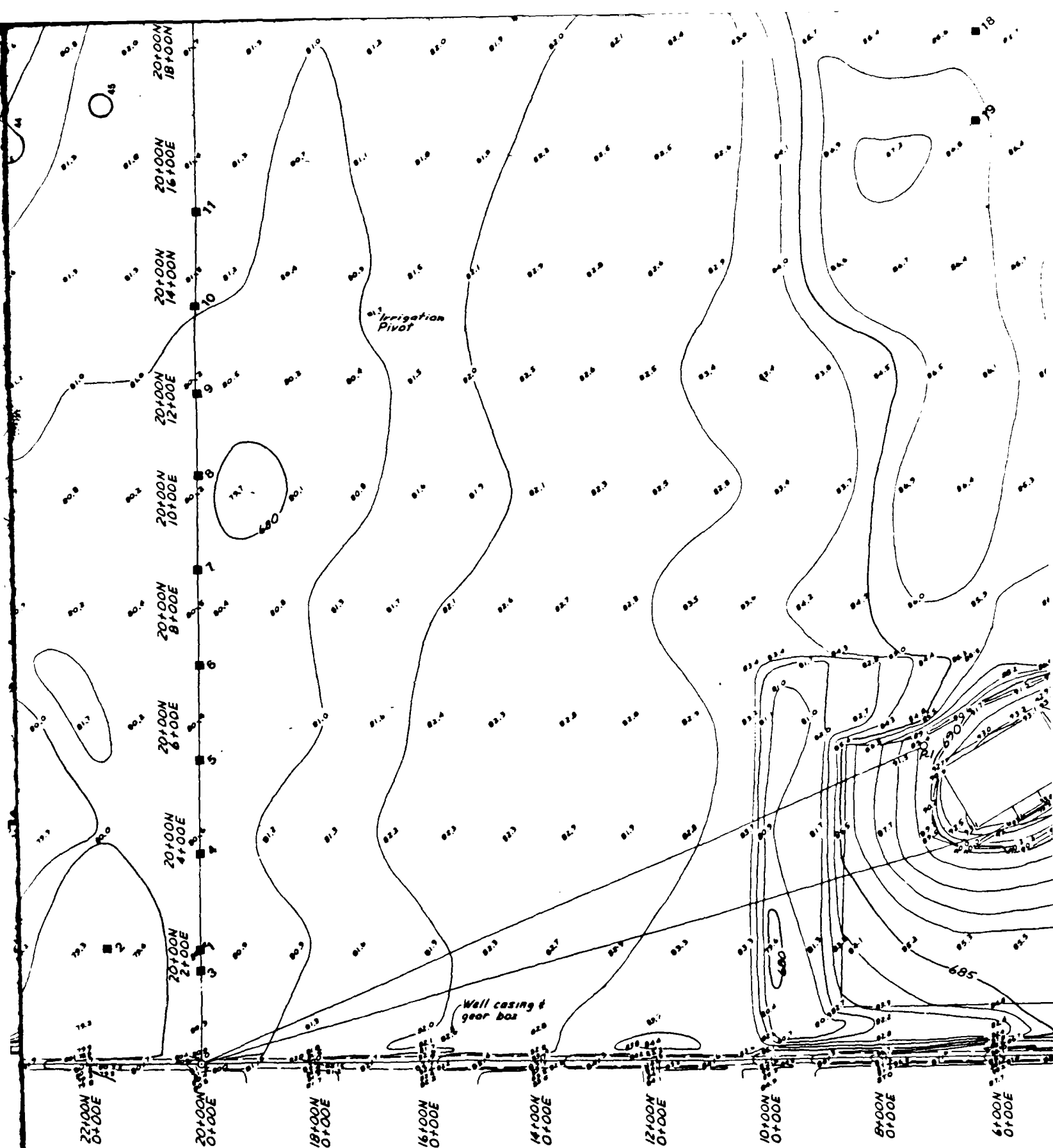


Figure 3: Location of tests and mounds.

